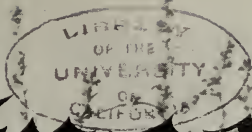


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GIFT
MAY 27 1913



Cleanings in Bee Culture

VOL. XLI. MAY 15, 1913, NO. 10.

Gleanings in Bee Culture

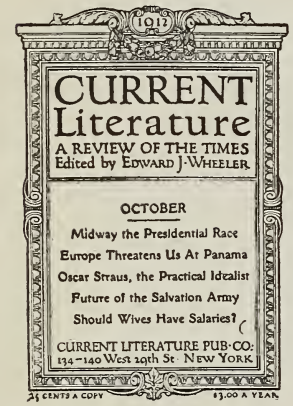
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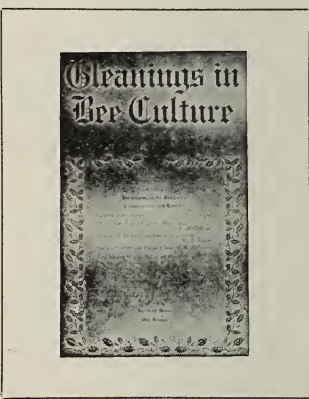


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VOL. XLI.

MAY 15, 1913

NO. 10

Editorial

OUR COVER PICTURE.

OUR cover picture for this issue is the work of our Colorado correspondent, Mr. Wesley Foster, as mentioned in his article on another page. The picture shows weak colonies placed over strong colonies so that the former may share some of the latter's strength, according to the Alexander plan.

MICHIGAN'S NEW FOUL-BROOD LAW.

MICHIGAN has at last an up-to-date foul-brood law. Some years ago it had a county law that was practically ineffective, as such laws usually are, and then, later on, a State-wide law; but this law carried with it a very limited appropriation, and was otherwise defective in many respects.

Two years ago the late George E. Hilton, Mr. E. M. Hunt, and others, exerted themselves to get through a modern foul-brood bill, but were unsuccessful. The beekeepers of the State, however, did not despair. They renewed their efforts again this year, and were finally successful in securing an effective law having an appropriation.

The administration of this new law has been placed in the hands of the State Board of Agriculture, and the latter has in turn placed it under the direct charge and control of the State Entomologist, where it should be, Professor Pettit, of the Michigan Agricultural College at Lansing. A competent inspector has already been appointed in the person of Mr. McMillen, of Guelph, Ontario, College.

Later.—Minnesota has just passed one of the best foul-brood laws we have. Particulars in next issue.

IMPORTANCE OF PROTECTING APIARIES FROM THE NORTH WIND.

As spoken of elsewhere in this department we have at the present time, May 9, eight different out-apiaries. As we have more yards this year than usual, several new locations had to be secured. As soon as the roads and weather conditions permitted we took a machine and drove out over our stone roads, seeking possible locations for bees. One spot about five miles out im-

pressed us as being very favorable for a yard. A steep bluff facing the south had at the bottom a nice grassy plot and a stream of running water. As the location was pastured with cattle we tried the experiment of putting the bees on the steep bluff or side hill. The hive-stands were fixed up in such a way that the backs rested on the ground while the front was supported by means of two stakes two or three feet long. In this way the hives were arranged in rows along the bank.

When our State foul-brood inspector in his annual rounds came here to look over our bees he remarked, "By jingo, Mr. Root, I guess I shall have to saw off one of my legs and splice it on to the other, if I stand up in front of those hives." It is a fact that, in order to work the hives, one must stand on one knee and a straight leg on the other. While this is inconvenient, the hives are away from cattle, and right where the sun can strike them nicely, and, most important of all, they are entirely screened from a north wind.

On the 7th of May, right in the midst of fruit-bloom, a sudden cold spell with a north wind came on. This stopped all bees working at all the yards except at this one on the bluff or steep side hill. Here the bees seemed to be working almost as well as at the other yards when the weather was warm. While a chilly wind was blowing strong from the north, the bees from this sidehill apiary were in a perfect roar. They would circle around in front of the hives, and, meeting no cold, would start off for the fields. When once started, they would not go back, but go to the fields, and so they roared all day. Whether they were gathering nectar we do not know; but busy they were.

Our State foul-brood inspector worked here all the afternoon in comfort for the bees and himself also, and he didn't saw off his leg either.

It is proper to remark that he found no foul brood at any of the yards except at one of the outyards, and that was a mild case. That colony was promptly burned.

THAT AUTOMOBILE TRUCK FOR OUT-APIARY WORK A GREAT SUCCESS.

THE little machine has been kept busy in hauling bees and equipment to eight different outyards. It is capable of a maximum speed of 22 miles an hour when running light, and carrying a maximum load of over 1000 lbs. We can take easily 25 colonies at a load; and as it requires only a very short time to make the round trip, we can take another load of 25 and make up a whole apiary in the forenoon.

Our policy last winter was to haul bees home on a sled when snow was on the ground, winter them in our mammoth cellars, and then in the spring, after the roads hardened up, put the bees back again in their several yards with the auto truck before mentioned. The scheme is working out to our fullest expectations. Never before have we been able to secure any considerable amount of honey from fruit bloom; but the little auto truck has enabled us to scatter our bees early in the season, and carry them long distances to where the fruit-trees are located. In one case we had only ten colonies in a cherry-orchard; and in another case we had 40 colonies in a fifty-acre apple-orchard. After we began locating bees in the fruit regions, the farmers all around us began to ask to have bees put on their places, and next year we propose working for fruit-blossom honey as we never have done before.

While we shall not get any honey in supers to speak of, it is worth something to have the brood-nests filled with fresh honey, and brood-rearing in all stages of development. It is worth something to have fruit-men ask to have bees put on their places, because this saves the cost of rental.

As soon as the fruit-bloom season is over we shall move some bees from fruit-yards where clover is scarce to localities where it is abundant. This can easily be done with a light truck at comparatively small expense. It does not make any difference whether the entrances are perfectly tight all around. When the bees are once on the road, the fighting qualities are taken out of them; and even if they do get out, as they sometimes do, there are no horses to be stung. The truck we have is called the Commerce, and was made in Detroit by The Commerce Motor Car Co. Ours cost \$875, equipped with top, lamps, and all complete.

On one occasion our boys went out to a distant yard prepared to stay over night and sleep in the truck (which is covered), get up early, close the entrances, and drive back. But the bees fortunately went to bed early. We closed them up and came back that night.

To show you the possibilities of the truck, our yard-man who operates it and works with the bees at the same time went off on a trip yesterday to a place 60 miles distant. He left here at 6:30, loaded up, got his dinner, and was back here by 4 o'clock. The truck is used daily to carry the boys to the outyards; but when they go they always carry something with them. One crew of three men are now running seven yards. These will be operated for the raising of bees for nuclei and pound packages, for the production of honey, and the rearing of some queens.

SCHOOL FOR BEEKEEPERS IN MASSACHUSETTS.

PERHAPS the most complete—certainly the best equipped—school for instruction in apiculture is the one located at Amherst, Mass., at the Agricultural College. While there are regular students taking a course in apiculture under Dr. Burton N. Gates, the Agricultural College announces a special two-weeks' school for beekeepers to begin May 28, followed by a convention on June 11 and 12, at which time a number of prominent beekeepers from all over the United States will be present to give addresses. The following is the announcement that has been sent out:

The faculty and the courses which they will give are as follows: Practical Phases of Beekeeping, Dr. Burton N. Gates; Crops for Honeybees, Prof. S. B. Haskell; The Relation of Bees to the Pollination of Plants, Dr. George E. Stone; Structure of Bees, Mr. I. W. Davis; Bees and Beekeepers' Supplies, Dr. James B. Paige.

Students will have the use of the regular apicultural equipment of the college, consisting of about two acres with fifty colonies of bees and a modern building constructed especially for the teaching of practical apiculture. Practically every device used in American apiculture will be shown, it being the aim of the department to procure new inventions as fast as they appear, for the purpose of study and comparison. A library of over 700 volumes and papers of apicultural literature will also be available to students.

It has been found necessary to limit the registration to fifteen, and applications will be accepted in the order received. A registration fee of \$2.00 will be charged, and will constitute the laboratory expenses.

For bulletins or other information address Prof. W. D. Hurd, Amherst, Mass.

Besides the lectures there will be field-day work, showing how to take honey out of the hives, how to extract—in fact, do a hundred and one things connected with the general work of handling bees. The College has erected a modern bee-building for wax-rendering, extracting—in fact, for doing any kind of work connected with a modern beeyard. It is equipped with the latest machinery, including a power extracting-outfit, with a honey-pump.

The field day will be an exceptional op-

portunity for many of the veterans, and certainly for all beginners, to learn the very latest that there is doing in the way of taking honey from the bees. Particulars can be secured from Dr. Burton N. Gates, Amherst, Mass. When we say that, in our opinion, there is no other school of apiculture that will compare with this one, perhaps we should except the one located at Guelph, Canada, under the direction of Mr. Morley Pettit. Both are doing splendid work; but the school at Amherst has never been better equipped than now. In a recent letter received from Dr. Gates he writes:

This course, the spring work for the layman, is one of six courses in beekeeping scheduled in the institution. They are: Two courses for the regular college students, the four-year men; a ten-weeks' winter course for the winter students; the spring course for the layman; a two-weeks' summer school; besides the correspondence course. This outline, I believe, exceeds apicultural instruction given elsewhere. Moreover, you know that our equipment is by far the most complete, especially our collections.

THE HANDBOOK OF APICULTURE.

DR. ENOCH ZANDER, of Erlangen, Germany, has written a book with the above title.* It is in three parts, each part to be had separately. No. 1 is devoted to foul brood and its treatment. It is a practical condensation of all that is now known on that subject, and fully illustrated with pictures enlarged by micro-photography, whereby germs invisible to the eye are enlarged to half an inch in length; but it must not be inferred from this that the photos are better than any drawings.

Dr. Zander is one of the men most able to speak on the subject of foul brood, and he has covered the ground in this book of 31 pages and 16 illustrations. In speaking of the rapid multiplication of the germs which cause foul brood, he says one bacterium will throw off a shoot or bud every twenty minutes, so that in 24 hours it will have multiplied to 16,500,000, and in 48 hours to 281,500 millions of millions.

Dr. Zander divides brood disease into sour brood, the germ of which, as the doctor claims, is *Streptococcus apis*, basing this claim on Maasen; foul brood, due to *Bacillus alvei*; brood pest, due to *Bacillus larvae*, or *Brandenburgiensis*. The peculiarities are described minutely.

But Dr. Zander does recognize *Bacillus larvae*, discovered by Dr. White, as the cause of American foul brood, or what he calls "brood pest." At the time his book was published, or written, rather, he, of course, did not and could not know of Dr.

White's further discovery of the cause of the other brood disease, or what we call European foul brood—*Bacillus pluton*. As we understand it, Dr. White has proved that *Bacillus alvei* is non-pathogenic—that is, not disease-forming; and although for many years it has been supposed to be the cause of foul brood, the evidence is pretty clear now that it has nothing to do with either of these diseases, although present with *Bacillus pluton*, and sometimes found with *Bacillus larvae*.

Immediately following the work referred to above comes another from the busy pen of Dr. Zander, entitled "The Structure of the Bee." As its name indicates, it is devoted entirely to a description of the various organs of the bee; and if any thing has been omitted we do not know what it is.

This work contains 182 pages, including 149 illustrations. After this we have twenty full-page plates, showing in all 75 enlarged views of bee anatomy, photographed in almost every instance from the organ itself.

THE CALIFORNIA HONEY CROP A FAILURE.

THE following telegram, received just as we were locking up this last form, will explain itself:

Season is practically closed, with no honey in sight; orange almost a complete failure; sage not yielding; will be the lightest crop since 1904, and may be for twenty years. Same report from all sage and orange districts, no crop. Further particulars to follow for June 15th issue.

Redlands, Cal., May 12.

P. C. CHADWICK.

We may add that we have asked our correspondent, Mr. Chadwick, to send us telegraphic reports just as we go to press, so that we may give our readers the very latest regarding the honey-crop conditions on the western coast. The foregoing is the first of a series of night telegrams.

The prospects for a white-clover honey-flow in the eastern States were never better than now. It is beginning to get a little dry, but a rain would set every thing booming. Fruit bloom generally has been good.

MR. TYRRELL RESIGNS THE EDITORIAL MANAGEMENT OF THE REVIEW.

JUST as we go to press news has come that Mr. Tyrrell, Secretary of the National Beekeepers' Association, has resigned his position as editorial manager of the *Beekeepers' Review*, the Association organ. Mr. E. D. Townsend, one of the directors, takes his place, and the publication will be continued hereafter from Northstar, Mich. Overwork has compelled Mr. Tyrrell to take this action, and he will now devote his energies to the work of the National.

* Zander, E., Erlangen, 1911. *Handbuch der Bienenkunde*, in Einzeldarstellung. Eugen Ulmer, pub., Stuttgart. In three parts, of about 80 pages each.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

THOSE BRICK records, p. 233, are ahead of book records in one way—you can see at a glance the whole apiary without turning leaves. But you must be in the apiary to see the bricks, and you can see the book miles away from the apiary, and plan accordingly. Besides, you often want to consult the records weeks or years afterward.

G. M. DOOLITTLE, there's much in what you say, p. 252. The beekeeper cusses the commission man; but when the beekeeper gets in a tight corner it's might convenient to have the commission man help him out. Allee samee, if some of the middle business can be cut out, it will be just so much to be divided between the producer and consumer.

A GREAT honor has come to me. I've been notified that I'm eligible to become a member of the Burbank Society, which admits only choice specimens of humanity like myself. And it costs only \$150. Could one of you kindly loan me \$150?

Later.—I've just learned that a man as common as A. I. Root is allowed to be a member. Also that, instead of \$150, it costs \$151—a dollar more than I can afford. I think I'll not "jine."

YOU think, Mr. Editor, p. 284, that with immense buckwheat crops one might get more honey by dividing before the early harvest. Exactly what I tried to express. But when you hint that stimulative feeding might make early division all right for me, we part company. I've some question whether stimulative feeding would make my bees build up sooner; at any rate, you've got to "show me" before I believe that any amount of stimulative feeding will allow me to divide before clover-bloom without cutting down my honey crop. [We did not mean that stimulation would make early division all right for you. We really do not see how it could unless you can postpone your honey-flow a month or six weeks.—ED.]

YE editor, p. 284, threatens me with having the whole fraternity down on me if I insist that "A1 honey is superior, irrespective of quantity, to sugar syrup" for wintering bees. I don't like to be squashed that way, but I guess I'll have to stand it, for that's exactly what I believe. [That is right, doctor—stand by your guns; but we hope you will not be shot to pieces. Joking aside, possibly you are right; but we believe we are entirely within the truth when we say that it is and has been within the line of orthodoxy to recommend sugar syrup in place of honey as a winter food; that when either is

sealed in the combs the syrup is not only cheaper but better. Now, if we are going to be shot to pieces by this bit of orthodoxy, blaze away. GLEANINGS will furnish the battlefield.—ED.]

MY reason for not painting hives is economy, according to p. 232. That's a minor reason; and if it were the only one my hives would all be painted. My first reason was that Doolittle approved it. My main reason is the same as his—it's better for the bees. As one little item tending in that direction, I may say that one winter I had moldy combs in only one hive, and that was the only painted hive. [It is hard for us to believe that the paint on that one hive made all the difference between mold and no mold. We suspect that if you would try the same experiment on a larger scale you would not be able to detect any difference. Are you *sure* there is real economy in not using paint? Is it not a fact that an unpainted hive will gap at the joints more quickly than one that has been painted, and that an unpainted cover will twist and check so that it will not fit? Is it economy to let robbers get through these cracks? If it is economy to let our hives go unpainted, would it not be economy to let our houses go the same way? Say, doctor, here is such a good chance to "jab" you and Mr. Doolittle that we could not resist.—ED.]

COMB-HONEY quotations have an unusual aspect. As is usual, the price toward spring dropped perhaps two cents. The unusual thing is that now, before any thought of new honey coming in, the price has gone up again where it was. I wonder just why this year should differ from other years, when it stayed dropped, no matter how scarce. [The markets have been more thoroughly cleaned up of *good* comb honey than ever before. There is a plenty of odds and ends and No. 2 and candied comb honey, but there is a great scarcity of No. 1 and fancy. Furthermore, intelligent and persistent advertising is now being carried on more extensively than ever to push the sale of both comb and extracted honey. If you will take a trip going through some of the large cities of the United States you will see that both comb and extracted honey are being put up more attractively than ever before. The packages, both of glass and tin, have the same professional appearance as other food products in glass and tin. Heretofore that has not been true. The day of cheap labels on cheap amateur-looking packages has gone by.—ED.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

Mr. H. G. Quirin, p. 115, Feb. 15, is quite right in his statements that the prolificness of a queen does not depend on her size. I, too, have sometimes had a very small queen prove one of the most prolific in the yard.

* * *

Mr. J. L. Byer inquires, page 76, Feb. 1, if foul brood is more virulent at times than others. I will say that this refers to European foul brood only. American foul brood in all localities seems to move on in the same slow sure way to the end.

* * *

Notice of the death of D. H. Coggeshall, Feb. 15, recalls to mind the pleasant day that I spent with him in his Florida home a year ago. I almost envied him his delightful home, surrounded with fruit trees and every thing to make life desirable. But he has been called away, and we are reminded again that this beautiful world with all its charms is not our permanent home.

* * *

That picture, page 83, Feb. 1, of an orange tree bearing a crop of icicles instead of oranges is indeed a queer sight. In much of California as in Florida and other parts of the extreme South, frost is the weather condition most dreaded, while in the North a winter free from snow or ice is equally to be feared, as it will be almost sure to work mischief to the clover and fruit crops later.

* * *

The editor says, page 73, Feb. 1, that the only thing fit to use during winter for closing entrances of hives when moving them is a light snow. May be in Ohio; but in Vermont we have moved a good many yards of bees in winter on sleds and found cotton wool to work perfectly. It is not always we have the light fluffy snow to use, and we always use cloth over frames somewhat porous.

* * *

Mr. Chadwick says, page 75, Feb. 1, that in California they have a law compelling the use of movable frames. So far so good; but does such a law make the owners use them in a sensible way? Of what advantage is a movable-frame hive when the frames are two inches wide, or combs built crosswise of the frames, or a honey-board and bottom-board both nailed securely to the brood-chamber?

* * *

On page 115, Feb. 15, Mr. David Roberts gives some facts in regard to the value of shelter in wintering bees. One thing he

seems to have overlooked; and that is, to give plenty of ventilation above the packing. If this is given, there will be little trouble from excessive moisture in the packing above the bees, no matter how carefully sheltered or protected. But do not shelter so much as to induce the bees to fly in weather so that they will get chilled and never return.

* * *

Dr. Miller seems to think, page 74, Feb. 1, that there is no more enthusiasm among the young beekeepers of to-day than among the beekeepers of fifty years ago. I guess he is right; but I have been wondering if we have as many young beekeepers to be enthusiastic as forty or fifty years ago. In the pictures of the conventions we see in bee journals, most of those represented appear to be old or elderly men—very few young men. I sometimes wonder if the old men attend the conventions and leave the boys at home to look after the "chores."

* * *

Mr. Chadwick, page 110, Feb. 15, speaks of the viciousness of bees in California; and I have noticed here in Florida they seem in most of the yards I have visited much crosser than in the North. I wonder if this is generally true; or is it because the bees I have seen handled were handled out of season or in the colder part of the year? Bees in Florida appear to be more sensitive to weather conditions than in the North. Bees in the North seem willing to work when the temperature is cooler than they will work here; and, again, they will stop during the hottest part of the day here, apparently on account of the heat, when they would not think of stopping in the North.

* * *

I am under obligation to Mr. Wesley Foster, page 128, Feb. 15, for correcting me in regard to the rapid granulation of alfalfa comb honey. As I have seen the statement in print many times, and so far have never before heard it contradicted, I supposed it was a fact. I also passed through Colorado some years ago; and while stopping at a hotel over night I called for some honey at the breakfast table; and after considerable urging I secured a little granulated comb honey. This was early in November, and tended to confirm my views of the granulation of alfalfa honey. So, then, it is sweet clover, alfalfa, cleome, and wild flowers mixed that makes the trouble. Glad to know it.

Beekeeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas.

As the season advances and the trees and the grasses and weeds begin to turn green, and we keep time to the hum of the bees, we find many a beautiful picture before us that is worth taking. In this day of easy picture-taking, much pleasure can be derived from snapping the numerous things that have helped us to make certain work much more easy. Who will take pictures of interesting things this season, and send proofs to us for publication, together with a few notes to accompany them?

* * *

OLD COMBS AND BULK COMB HONEY.

The following question was sent by a western subscriber for our reply:

I have 200 shallow extracting-supers filled with drawn comb made from full sheets of medium brood foundation, having been worked above excluders. These are all wired. What I want to know is whether they will make good bulk comb honey by putting them on the hives this spring and letting the bees fill and cap them. So far as the wires are concerned I think I can pull them out when the combs are finished. But I am not aware whether or not these old combs will be tender enough to make a merchantable grade of comb. They have been used only two seasons, and are clean and in good condition.

I note also in GLEANINGS, Nov. 15, your remarks as to sizes of containers of bulk comb honey. As to the 12 and 6 pounds cans, will you kindly advise me where to buy them, and whether or not you get the cases for these *with* the cans, or do you buy the cases elsewhere? The factories from which I have quotations quote the cans alone, and make no reference to cases.

Extracting combs several seasons old should not be used under any circumstances for bulk comb honey, even if they are nice and clean, and especially not if they are built from medium brood foundation. For bulk comb honey nothing should be used that is not strictly newly built comb honey, and in all respects as nice and tender as your section comb honey that you are now producing. Nothing inferior to this should be put up as bulk comb honey. It is strange that the idea prevails in the minds of some beekeepers that almost any thing can be used for bulk comb honey; but it should be understood that bulk comb honey as produced in Texas, where this product as it is put up here originated, is nothing but what strictly section comb honey would be, produced in shallow frames, cut out and packed in nice clean cans, etc., of regular or standard size packages.

In our methods of manipulating the colonies for best results in comb-honey production we make use of shallow extracting-supers on all our colonies for producing bulk comb honey. These are left on the hives during the winter, and provide extra breeding room in the early spring in addition to the brood-chamber below. This in-

sure extraordinarily rousing colonies of bees for the honey-flows later. As the first flow comes on, these extracting-supers are already partly full of honey from the scattered sources during the spring, and all the honey that was not used during the early breeding season. As the flow begins, these are raised; and the new supers, filled with *full sheets of thin surplus foundation* in the frames, are slipped in between them and the brood-chambers. The bees go to work at once, and seem to try to fill the empty space with a vim that can not otherwise be obtained. After this the usual method of tiering up supers is practiced as needed during the honey-flows, exactly the same as in section-honey production. You will find, therefore, that the 200 supers with combs are a valuable investment, ready to be put on the hives in the spring to catch the early scattering honey. The extracted honey will be needed, and more than you will be able to produce in these supers.

These same supers will come in handy at the end of the honey-flows, to catch the scattering honey as the flows close. By having the honey extracted from these supers they are ready to go in the hives as soon as it is too late to give any more supers with foundation. Much honey is gained by this practice, both in the early spring and after the honey-flows, and the colonies are in better condition to give larger yields than when the old methods are practiced. Besides, we need much extracted honey, and we produce some of it at a time when it would not be profitable to produce bulk comb honey. The 200 shallow supers with combs are worth a great deal more, therefore, if used as suggested, than if they could have been used for bulk comb honey; and if shallow supers are used in this way on all colonies (especially if our number of colonies is large), the extra profit obtained amounts to an enormous item.

We have not bought any of our honey-cans without the cases, more because it has been more convenient to buy them with the cases; and then because we have not had the time nor the facilities to make our own cases. We understand that some beekeepers buy the cans in bulk, and gain by making their own cases. Here in Texas there are a number of dealers in honey-cans from whom we get our supply usually. Many car lots of these honey-cans are used in this State each year. Arrangements can be made direct with some of the can companies, especially if a carload of cans can be used at one place.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

TREATING PARALYTIC COLONY BY CHANGING HIVES AND COMBS.

Two cases of paralysis developed in my home yard of 16 colonies. They were the worst I ever saw. I waited day after day, hoping to see the bees improve, for as a rule this trouble is overcome by the bees themselves after a time. No improvement came, however, and they continued to leave the hive until early in the morning when there would be dozens and sometimes hundreds crawling and quivering on the ground. In one colony the force of bees dwindled until they were barely able to cover their seven frames of brood. I secured a clean new hive in which I placed one clean empty comb and some full sheets of foundation. The entire colony was shaken into this hive, and the brood was given to another colony, the result being that I have since seen no sign of the disease, and the bees of that colony are drawing their foundation rapidly. Just what was responsible for the cure I am not able to say, for I had little idea that a cure could be completed so quickly; yet here is the colony before me without any sign of the disease, while the other one still has the trouble badly, with no sign of improvement. I intend to let them alone for a time in order to see whether they continue to dwindle. The cure may be due to changing to a clean hive, or it is possible that being driven to comb-building and the use of much fresh nectar may be the cause of their recovery.

* * *

CHANGE IN INSPECTORS.

"Bob" Heron, the much-complained-of inspector of San Bernardino Co., has at last been removed by the County Board of Supervisors, and thus the curtain falls on the last scene of a ten-years' fight for his removal. And, strange as it may seem, the man who led the winning charge with the hope of getting the place has fallen in the battle. Mr. M. Segers, Jr., who circulated a petition for the place, and had the backing of the County Association as well as most of the beekeepers of the county, fell, as nearly as I am able to learn, a victim to his own thoroughness. He made the statement before the supervisors that he would take no man's word for the condition of his bees. When questioned about his father's he said the same. The young man was right; but that was too thorough for our supervisors, for it would cost some money. But how about the inspectors for scale? Do they go to the orange-rancher and ask

him if he has any scale? No! "Not on your life!" They just walk in and inspect. If they find scale, the orchard is fumigated without question, and that is the only sane way to go at it. Mr. M. J. Meeker is our new inspector, and we doff our hats to his authority. I will do so with the best of grace, though I fought him in favor of Mr. Charles Trout last fall, for I believed Mr. Trout was the best man in the county at the time for the place; but Charley was too young and ambitious to take the place, and is now making his way creditably through medical school.

* * *

A DISCOURAGING OUTLOOK IN CALIFORNIA.

Conditions in this part of California seem to me to be about as perplexing, disappointing, and discouraging as any time during the past ten years. The sage was frozen and badly damaged, the wild alfalfa was also nearly all killed (and this is a source that, while not at all appreciated when coloring our lighter grades of honey, in ordinary seasons it would be a great help in a season like this). We had hopes of a fair amount from the sage in case of late rains, but they did not come. We still had the orange. Though it too was badly damaged, the buds began to appear and to show signs of a good bloom; but they dropped rapidly before they opened, and nearly one-half of them never opened. It now develops that those that are blooming do not contain the usual quantity of nectar, and are passing out of bloom rapidly.

My scale colony showed a gain of 10 pounds to-day, April 26; but under old-time conditions they should have reached the 15-pound mark. Conditions are not so bad in some localities. Much of the orange toward the coast is in fine shape, due to the trees not being so badly frozen that they lost their foliage. On such trees the bloom is about normal, and should produce the usual quantity of nectar. More rain has fallen in the counties of Los Angeles, Ventura, and Santa Barbara as well as further up the coast than in the inland district, and some sage honey may be secured in those counties. But our chances inland are about as poor as one could imagine. One poor season is not so bad; but when they come in pairs and even three in succession, it makes us wonder if the bee business is really worth while. But old conditions will return to those who hang on, and then we shall be glad we persevered until a better day dawned.

Conversations with Doolittle

At Borodino, New York.

IMPROVING THE BEES.

"Mr. Doolittle, the ideas you advanced in regard to longevity of bees, and selecting stock along that line, are well worth studying and putting into practice. But are there not other lines of improvement which should be worked out as well as this one? Be kind enough to tell about some of the other things which go toward making *better bees*, and how you were led to your present standard of excellence."

"Without question, the prime idea of all who keep bees is the profit they will give. I think I should be quite safe in saying that, if they cease to yield a profit to their owner for several years in succession they would cease to have owners. That there is a vast difference in the profits from the different colonies in the same apiary was something I found out fully forty years ago when I had nothing but the old black bees to work with. One colony, or a majority of the colonies in the same apiary, would often give satisfactory returns at the end of the honey season, while others just as favorably situated, and in equally good condition in the spring, so far as I could see, gave little or no profit. This trouble was laid at the door of the German or black bees when the high praise of the Italians was first being sung in the sixties and early seventies. But a careful trial of the Italians showed that, while they were a more profitable bee than the blacks, yet they were no less subject to this variableness in yield at the end of the season.

"A similar difference in stock is also noted by our dairymen. Certain cows in their herd can not be bought at any price, while others are an absolute bill of expense to their owners unless their carcasses can be turned into beef. Hence an effort is constantly made to propagate the good qualities and eliminate the bad. Now, this is just what every apiarist should do with the bee. And it is something which the majority of beekeepers have sadly neglected, although much more thought and effort have been put forth along this line in the last few years.

"We should start with the *best* race of bees. The Italian I take as the best domesticated honeybee yet brought to public notice, which I think is the verdict of the world's best apiaries of the present time. They are quite largely proof against the wax-moth and its larva, and very successfully hold out against the ravages of European foul brood. They rarely desert their

hives in early spring, no matter how moldy or foul their hives may have become through a disastrous winter. In one case, some 35 years ago, when colonies of black bees were deserting their hives by the score, not an Italian colony did this. I had a colony of these which numbered just 82 bees and the queen, by actual count, on May 15, and yet they held their hive with filthy combs, and protected their stores from robbers, building up so as to give quite a surplus of comb honey from buckwheat, while fairly strong colonies of black bees deserted combs and hives which were comparatively sweet and clean, or suffered their stores to be carried off by robbers.

"However, the main point of excellence in the Italian bees lies in the fact that, whenever a small amount of honey is obtainable, they are up and at it, often making a gain in stores while other races of bees require feeding to keep them alive. And as the profit side of beekeeping must come largely by way of the *stores* gained, after experimenting for years with all other races of bees, and proving that, for this locality, none others were equal to the Italians, I have decided that they are the *best* bees to use in carrying out any improvement.

"And now we come to 'the different lines of improvement' you ask about. In my late article I put *longevity* at the head, and above prolificness of queen, which was considered during the past to be the highest point to be worked for. Having the longevity part established, then efforts toward an extra prolificness of such queens will be in order. Then I would prune out every colony showing traces of black or other inferior blood. Next I would kill all queens which produce vicious bees. I consider the keeping of vicious bees only on a par with keeping a vicious cow or horse. Any of them are a danger, and a constant nuisance.

"Another class of colonies to be disposed of is that which fails to winter well or to give satisfactory results along the lines we are working, though in appearance and temper the bees may be faultless. These should have their queens replaced by others which we have reason to believe will be more to our advantage. In a large apiary it is often hard to account for the failure of some colonies in coming up to the standard we have set. But with such cases it is always safe to abolish the queen, providing one instead which was bred from the mother of the colony which has given the best results in all points under consideration."

General Correspondence

SWARMING CONTROLLED BY REVERSING THE ORDER OF THE BROOD-FRAMES AND REMOVING THE QUEEN

BY H. D. MURRY

When I began running out-apiaries in 1906 I had a plan for controlling swarming that had only one fault—it failed to control. It had been a good plan in another locality, but it failed to work here. I saw that I had to do one of two things—find a plan that would succeed here or quit running out-yards.

Just at this time Mr. G. M. Doolittle was telling through *GLEANINGS* how he built up an outyard and divided it just at the beginning of the surplus crop, and got a crop of honey from both divisions, prevented swarming, and made 100 per cent increase. I was favorably impressed with the plan, but it bore some resemblance to the plan that I had been following, and I knew that it would not work here, if followed just as Mr. Doolittle practiced it.

The same year, Mr. J. L. Stachelhausen, of Cibolo, Texas, told, in the *American Bee Journal*, what causes swarming. According to Mr. Stachelhausen it is a congestion of the brood-nest and a surplus of nurse-bees. He explained that, by splitting the brood-nest in the middle, and turning it wrong side out, the congestion could be broken. Every apiarist knows that the bees build their brood-nest in a spherical form. The combs in the middle of the nest contain the most brood, while those in the outer part contain the least. To perform the operation we reverse the order, placing those with the least brood in the center, and those with the most brood on the outside of the brood-nest, just as if we were to split an apple open and turn the convex sides together. In doing this we do not place any combs without brood in them between combs containing brood. The bees go to work at once to re-establish the spherical form of the brood-nest, and in doing so they fill out the center comb and extend the brood into the adjacent combs outside the brood-nest. By this plan, reversing brood every ten days or so, we can delay swarming till we get the brood-chamber full of brood. Then, unless we do something to prevent, there will begin to be a surplus of nurse-bees—that is, there will be more chyle accumulating in the stomachs of the nurse-bees than the brood can consume. Mr. Stachelhausen maintained that these nurse-bees with their overloaded stomachs grow restless and bring on what is known as the swarming fever. To

prevent this, as soon as the brood-chamber is full of brood, excepting the two outside frames, he advised that we remove two frames of sealed brood, putting in their place empty combs or full sheets of foundation.

Well, all that seemed plausible to me, but it was not complete, according to my ideas. So I turned to Dr. Miller's "Forty Years Among the Bees." I found that, in order to prevent swarming, he caged the queen for seven days. The idea occurred to me, "Why not remove the queen and start a nucleus with her and let her be laying during that seven days?" So from these three plans I evolved the one following, which has been a complete success so far as I am concerned:

As soon in the spring as the bees begin to build up I go over them; and where they have brood in four frames or more, I reverse the order of the brood-frames, as explained above. I do this every ten days until the brood-chamber is full of brood, excepting the two outside frames, which should be full of honey and pollen. Then I remove the queen with two frames of sealed brood, and start a nucleus with her. Twenty-four hours later I give the parent hive a ripe queen-cell. In ten days or so there is a vigorous young queen laying in the hive, and all inclination to swarm is over for that honey-flow.

When I remove the queen I replace the two frames, taken with her, with empty combs or full sheets of foundation, placing them near the center of the hive with two frames of brood between them. The nucleus may be built up later by adding brood taken from other hives that have become full of brood; but a queen removed early in the season will usually build up strong enough to winter without any assistance except the addition of empty combs or full sheets of foundation. This plan of removing brood will just as effectually retard swarming as the famous (?) Jones plan of shaving the heads off the brood. The principle in both plans is the prevention of a surplus of nurse-bees. Any thing that breaks the continuity of egg-laying in the hive for several days will retard swarming.

At each operation, reversing brood or removing the queen, I destroy all queen-cells in the hive. I hardly ever remove the queen and start a nucleus unless the colony gives indication of wanting to swarm by starting queen-cells.

Some will want to know where I get the queen-cells to requeen. If I am visiting the

yard every ten days, I can remove the queen from a strong colony, such as I want to breed from, and there will be cells there on my return ten days later, or the eleventh day when I want to requeen. However, I prefer to introduce the cell at once, upon the removal of the queen, by placing it in a cell-protector and placing that on one of the combs in the usual way. This saves an extra trip to this yard. Another way to get the cells is to have a queen-rearing yard, and carry the cells to the yard for all the increase one wishes to make.

By following this plan there is no let-up of work in the supers as there is by the shaking plan or any other plan that I ever tried, but work goes right along as if nothing had happened. In testing this plan in 1907 I tried it in two yards, with the result that there was no swarming in those yards. I made 100 per cent increase, and got more honey per colony than in any other yards. We thus have the matter of increase in our own hands. If we wish no increase, we may kill the queen and requeen as described above, or we may cage the queen as per Dr. Miller's plan.

Mathis, Texas.

MODIFICATION OF THE BALDRIDGE PLAN FOR CURING FOUL BROOD

Running the Bees from the Diseased Colony into a Healthy Colony

BY CHAS. M. MUSGROVE

The foul-brood situation in this part of Berkshire Co. is discouraging. Since the inspection in 1911, nothing has been done except by individual beekeepers; and in many cases where disease was found in 1911 nothing has been done in the line of treatment. The consequence is, we are surrounded with diseased colonies to such an extent that I, for one, made up my mind that I would go out of the bee business unless some way could be found whereby I could control matters in my own yard independently of the surroundings.

In the fall of 1911 Dr. Stockwell, of Stockbridge, Mass., at our beekeepers' meeting read a paper in which he argued from a medical standpoint that it is possible, by constant selection, to develop a race of bees that will be practically immune to the disease.

With every method of treating foul brood, so far given to the public, there is constant danger of spreading the disease through opening the hive and shaking out honey as well as bees. With the Baldridge plan the shaking is eliminated; but even then in opening the hive and catching the queen

there is danger that healthy bees will get some of the honey. Perhaps with experts there is no danger; but we are not all experts. In any case, if we wait according to directions until the beginning of the honey-flow, and then treat by either plan, our harvest is over before the bees have time to build up strong enough to take advantage of it.

In my experiment I have used the Baldridge plan as part of the treatment, and Dr. Miller's plan for requeening comes in also.

Early in May, 1912, when I found colonies with European foul brood I immediately closed the hives as they were before, and placed by the side of each an empty hive. This, I think, is an important step in the treatment.

Instead of doing any thing more with the diseased colonies, which we will number 1, 2, 3, 4, and 5, I proceeded to treat a colony which did *not* have the disease.

In 1911 I had one colony located between two diseased colonies which did not contract the disease, and which produced more comb honey than any other which I had. I went to this colony, which we will call No. 6, and commenced feeding for the purpose of forcing a swarm. The result was, that on May 18, which is very early for this location, I had a large swarm. This was hived in the usual way. Parent colony No. 6 was removed, and the new swarm put in its place. So far there is nothing new.

I then went to colony No. 1, removed the empty hive before mentioned, and put No. 1 in its place. Then I put No. 6 (which had just cast a swarm) where the diseased colony had been. The result, of course, was that most of the flying bees from No. 1 went into No. 6. Then in the evening I placed over the entrance of No. 1 a hollow tube extending to about the center of the entrance of No. 6, and ending with a Porter bee-escape, so that, as bees from colony No. 1 came out they were *forced* to enter No. 6.

No. 6, being reinforced with the bees from No. 1, became so strong that, as soon as the young queen could fly, they cast a larger swarm than the prime swarm headed by a young queen. This swarm gave me more honey than any other I had. Colony 6 swarmed the second time; was removed, and the new swarm put in its place without removing the bee-escape tube from No. 1. The remaining bees and hatching brood reinforced this new colony, and, for a time, two queens were working for the benefit of this colony.

Colony No. 6 was then taken to No. 2, and the same process repeated. In this way I treated five diseased colonies from hive No. 6—getting, in place of five diseased

colonies, five strong ones ready for the harvest. From four of these I had more surplus than from any other four colonies I had; and up to the time for final packing for the winter I had no trace of foul brood.

After all the bees had left these five hives I waited for a rainy day, removed the hives, and melted the combs. This was the last of July. I think there was not one pound of honey in all the hives. It had all been converted into bees.

There are many advantages in this method of treatment; and, so far as my experience goes, no disadvantages.

1. No loss of brood or honey.
2. No chance to spread the disease.
3. Ease of operating (a box hive can be treated as easily as any).
4. Improving the stock, and working toward immunity.

Automatic requeening.

6. Strong colonies ready for harvest.

Of course, more than one healthy colony could be used in this treatment; but I wanted to give it as severe a test as possible. It would seem as if bees from diseased colonies carry the disease with them when they leave the hive. In other words, if the Baldridge plan is not safe, then the hive through which five colonies had passed would show some sign of the disease before fall. It did not.

Pittsfield, Mass., Jan. 7.

REMOVING THE QUEEN AND TWO COMBS OF BROOD TO PREVENT SWARMING

BY A. C. GILBERT

Last year spring dwindling did not trouble our bees. They had a large amount of brood, but as they were mostly in air-spaced hives (chaff removed) none chilled during several weeks of cold weather. They built up into powerful colonies early, while other beekeepers around told of their bees dwindling.

Our bees were protected on the north by buildings, and on the west by a high fence. Had that something to do with it? As early in the season as the weather permits, all colonies are looked over in order to ascertain the strength and amount of stores. If any are found light in bees, some of the combs are removed, and the division-board moved up in accordance with the size of the colony. All needed stores are supplied, after which empty combs and combs of honey are added from time to time.

As swarming time comes, a number of the first swarms are hived on empty combs or foundation. If it is very early, and increase is desired, the swarm can be hived in

a new hive on the old stand and the old colony removed to a new location at once, or seven days later. This is a very common way, but all right at a certain time in the season. The right time in this locality is when the new colony will store well, as in the early part of the clover season. The old colony will be just right with a new queen laying for the last of the clover and basswood.

If no increase is desired we sometimes remove, for fourteen days, two combs of brood and some bees with the queen. If no cells were started at the time of removing the queen, removing the two combs once is all that will be required before returning the queen and brood. If two combs and a queen are set back of the division-board with a small piece of zinc on it the queen and brood can be returned with perfect safety to the queen on the fourteenth day.

MAKING STRONG COLONIES THAT SHOW SIGNS OF SWARMING DRAW OUT FOUNDATION FOR BAITS TO BE USED BY WEAKER COLONIES.

When very populous colonies show signs of swarming, shaken swarming can be practiced, which might save some confusion by preventing too many swarms coming out together.

I have often read how colonies not very populous store comb honey in the bait sections only, and leave the foundation untouched. I struck on a way to get foundation drawn for such colonies. During a time when the bees are gathering nectar rapidly, place a super of sections with foundation on top of the super or supers already on a very populous colony. In from 24 to 36 hours the foundation will be drawn out beautifully and white—far enough so that a moderate-sized colony will begin to store at once. I think there is a gain of one or more supers from such colonies some seasons. During the time the bees are drawing the foundation there seems to be no let-up in storing honey.

Honeoye Falls, N. Y.

PROTECTING BEES FROM INJURY WHEN SHAKING THEM FROM COMBS

BY M. G. DERVISHIAN

When shaking bees from combs with a sudden jerk on the entrance-board or on the ground, the bees are injured more or less, and become angry. To avoid this, and in order to save the queen from any injury, I make use of a soft quilt half an inch thick and about two feet square. I spread this before the entrance, and over it a soft nap-

kin extending very close to the entrance. The reason why I make use of the napkin is that often the light nectar is thrown out by the sudden jerk and falls on the napkin. The quilt is then saved from being soiled, as it can not be washed as easily as the napkin; and when the very young bees remain in heaps on the napkin I tilt it and shake then toward the entrance. In this way I help them to go into their hive very easily, so it takes only a few minutes to make all of the bees enter the hive. I shake the bees in the same manner as explained and illustrated on pages 19-21 in "A Year's Work in an Out-apiary," by Mr. G. M. Doolittle.

PROTECTING BEES FROM BEING CRUSHED BETWEEN THE WALL OF THE HIVE AND THE SIDE-BARS OF FRAMES.

The shape of my frames resembles that of the Hoffman, but they are only eight inches deep. For end spacing I make use of a small headless wire nail on the under side of the top-bar in place of the end-spacing staple used on the Hoffman frame.

To prevent the bees from being crushed or hurt between the side-bars and the wall of the hive I drive a small wire nail at the outside of the lower extremities of the side-bars of the frames. This nail furnishes a bee-space when lifting upward the first one or two frames from the hive. Of course, when one or two frames are removed the others are taken out by moving laterally. In this way no bees get hurt or killed, and so my pets do not hate me.

ATTRACTING NATURAL SWARMS BY THE SMELL OF ORANGE LEAVES.

When I see that the bees are swarming I cut from an orange or a lemon tree a small branch with a few leaves. I bruise some of these leaves so as greatly to diffuse the smell. The bees are very fond of this refreshing odor, and they go and cluster on the branch. Sometimes when the bees are not flying high in the air I put the lemon or orange leaves in an open hive in which I intend to keep them; and when I move the hive near, the swarm descends and takes possession.

Nicosia, Island of Cyprus.

DECIMAL SYSTEM OF HIVE NUMBERING

BY THOS. BOLTON

In your July and August issues of last year, different writers point out the mistake of numbering *hives*, and say that the *stand* or position is what should be numbered. This is a correct conclusion, and step No. 1 in advance. But they still seem to adhere to some affixing of numbers to the stand;

and this has so many drawbacks, and involves so much extra walking about to view the numbers, as well as a "fixing" of some kind to each position, that if we can devise a means to do away with these evils we shall have taken step No. 2 toward an ideal system and a big step, too, for the oft-times hurried apiary worker.

There is a simple plan whereby we may accomplish this, and upon which I have worked my home and out apiaries for the past 20 years or more. It begins with the arranging of the apiary in rows of ten stands, preferably at regular intervals, or it may be of ten groups of stands. We then place at the beginning of each row, *after the first*, a numbered board about 9 x 7 inches, painted white, with figures in black, and as large as convenient. These head-numbers, as we call them, are nailed to stakes about 42 or 48 inches high, and it is sufficient, we find, to place one at the head of every alternate row instead of one to each row. The first board will be (as stated) at the head or beginning of the second row, and fourth and sixth rows, and so on. As there are ten stands in the first (and every) row, it will be seen that the first stand in row 2 will be 11; in row 3 it will be 21; in row 4 it will be 31, and so on, each ten in advance of the preceding row. In actual practice we omit the unit 1, and so the head numbers above read 1, 2, 3, the operator mentally adding the requisite figure as he makes his record or gives his instructions to an assistant, indicating any particular colony. This required figure will be known by a simple glance along the row.

Let us suppose he is at the sixth stand in any row. A glance, as he straightens himself preparatory to moving on, shows that the head number is 1; consequently the hive is 16; or if the head number were 5, say, or 12, or 20, you simply place 6 beside it, and your hive is known, without any loss of time, as 56, 126, or 206, as the case may be. There is, therefore, no need of numbering every stand—no need to walk about to sight a figure possibly on the end of a hive that is furthest from you; and the veriest novice can be sent with certainty to any hive. Then, again, if one is at, say, stand 75, on either side are stands in neighboring rows that perforce are 65 or 85—no count needed. Compare the plan of alphabetical letters or other schemes with this decimal system of hive-numbering, and they are as a farm wagon to a motor car.

Lambenck, Victoria, Australia.

[This is very similar to the plan suggested by Arthur C. Miller, p. 665, Oct. 15, 1912.—Ed.]



Apiary of John Wallace, Grand Junction, Colo., where bees were poisoned by spray falling on clover under the trees.

SPRAY FALLING ON CLOVER KILLED BEES

BY WESLEY FOSTER

Early last fall I was called to the vicinity of Grand Junction to investigate the cause of so many colonies dying during the height of the season. I reached Grand Valley about the first of September. Mr. John Wallace, a fruit-grower and beekeeper, met me at the hotel and took me out to his place, a mile and a half east of Grand Junction. We passed the now abandoned Indian school, surrounding which is some of the typical seepage land of the western slope country. Alkali shows in many places, and the orchards have either died out or are dying.

Mr. Wallace had lost upward of one hundred colonies of bees, so that was the principal topic of conversation. The only thing that was very apparent was that the trouble was caused by spraying. But spraying has been done for years, and little trouble such as befell the bees had been experienced before.

A few points regarding the methods of spraying may not be amiss. Most of the fruit-growers are alert and up-to-date, and do not spray during full blooming time, although there are some blossoms that get the spray before the petals fall, as all trees do not bloom evenly. But from five to seven later sprays are applied; and the spray falling upon the clover, alfalfa, or other

blossoms beneath, would doubtless poison the bees. "Cover" cropping has been practiced more and more each year—alsike, red clover, alfalfa, and sweet clover being grown. The amount of cover crops in comparison to the fruit acreage is small, and this has led some to think that the spray could not cause the trouble.

Arsenate of lead is the spray material that has been used largely; but because of its expense a considerable number of fruit-growers have been trying arsenide of zinc. I understand the arsenide of zinc has not given the results secured from using arsenate of lead. The trouble from poisoning bees began about the same time as the use of arsenide of zinc, so that this seemed the cause in some minds.

The spray which fell on the clover poisoned some cattle and horses that were pastured in the orchards.

Some died and others recovered. Mr. Wallace had a cow that sickened and died up, but she finally recovered. A flock of sheep pastured on the alfalfa in the orchard shown above were not affected by the poison on the leaves at all. The sheep are shown back of the row of hives. These colonies were purchased to help make up the losses caused by the spraying. Mr. Wallace told me early in March this year that he had only about 35 colonies left, so his losses have been considerably above one hundred colonies.



Partial view of P. Merconchini's "Virginia" apiary, located near Manzanillo, Cuba.

The losses were confined to the fruit districts. As soon as I got two miles away from any orchards no more losses were found among the apiaries, and good crops and plenty of increase was the rule.

Boulder, Col.

AN AMERICAN APIARY IN CUBA

BY P. MERCONCHINI

I take pleasure in sending a partial view of my little beeyard, located about 300 yards from the last house in this city, and near to the Cuba Railroad water-tank. I am now running 50 colonies, as I have no time to attend to more. The bees are all Italians, of an American strain.

In this vicinity there are about 2500 colonies. My assistants are my two boys—Rodrigo, 11 years old, and Luis Maria, eight. They are good assistants but better honey-eaters.

Manzanillo, Cuba.

THE LATEST FORM OF THE FERGUSON UNCAPPING MACHINE

A Light Model that Can be Pushed Down Over the Top-bar while the Frame is Still in the Super

BY L. R. FERGUSON

Since the appearance of the article, July, 1909, describing my uncapper, I have been devoting most of my spare time to develop-

ing a machine especially adapted to use with the Hoffman frame. As the character of the end-bars is such that the frames can not be pushed through the machine endwise, as in the former machine, it occurred to me that there would be a decided advantage in making the machine light enough to be easily handled and pushed down over the frames as they hang in the super, and then leaving them in the super to drip, thus eliminating one handling.

To obtain the best results, the capping tank should be set low down and provided with slides or rails so arranged that the supers as taken from the hives can be put on at one end, and easily slid along toward the extractor at the other end after the combs are uncapped. In this way the handling or moving of the combs is all done by the superful instead of singly, thus saving a great deal of time. When the supers are set on the slides the frame next to the operator should be removed to give room for the machine to enter the supers. These removed frames should be put in another super; and, when the right number have accumulated, put on the slides with the others.

In the act of uncapping, the operator grasps the handles of the machine and enters the points of the end plates, one end at a time, just inside the end-bars of the frame as shown in Fig. 1; then he pushes the machine straight down over the frame, removing the cappings from both sides of the

comb, the cappings dropping into the tank below.

If it is desired to leave the comb in the super the machine is then withdrawn, and the operation repeated on the other combs in their respective turn; but if it is desired to remove the comb, the operator grasps the handles at the center, which causes a couple of dogs, or catches, to engage the top-bar of the frame, and the comb is withdrawn with the machine as shown in Fig. 2, and may be deposited in any desired place; but in either case it is not necessary for the operator to touch with his hands a single frame until they are lifted to put in the extractor.

Nearly every one to whom I mention this feature of leaving the combs in the super after uncapping doubts there being any advantage in it; but let us see. After the machine is pushed down over the comb it is nearly as quick and easy to withdraw the comb as to leave it; but after it is withdrawn it takes fully as much time to swing the comb over to any kind of rack, deposit and release the comb, and bring the machine back to position as it would take to uncap another comb; or, in other words, two combs can be uncapped and left in the super in the time required to uncap one and deposit it in some other place, or the simple expedient of leaving them in the super will double the capacity of the machine.

Considering the great variation in styles of frames, and in the degree of care or carelessness bestowed on the building or securing of combs, I believe I am safe in saying that there will never be built a practical machine which will work equally well with all makes or styles of frames, so it follows that the machine which will work well with the class of frames in most general use will be the most practical machine, and that is just what I believe I have produced. But, as with all other improvements, it will be necessary for the beekeeper to meet it part way by making such changes in his management and equipment as will favor the successful use of the machine, and this means a little extra care to secure reasonably straight combs, and wide enough spacing to insure as much as a $\frac{1}{8}$ -inch bulge on each



P. Merconchini's two boys who will be extensive beekeepers some day.

side of the top-bar. This will insure a gain or saving of two frames in ten, or 20 per cent in frame equipment, and anywhere from 50 to 75 per cent in the cost of uncapping; and this saving surely makes it worth while to take some extra pains in securing the right kind of combs.

Mr. J. J. Wilder, of Cordele, Ga., who has used two of my experimental machines, writes me in part as follows regarding his impressions of the last one:

Your 1912 model uncapper came to hand in due time, and we set it to work at once, and have done a lot of uncapping with it. I uncapped lots of old tough combs containing thick sticky honey, and we are pleased with it, with only one exception. We can't get close enough to the top-bar with it. It leaves from two to five rows of cells near the top-bar on straight smooth combs built out just even with the top-bar; but it runs over them nicely when they are bulged a little. * * *

This is the only suggestion I have to offer, for it certainly uncaps the honey in shallow and deep frames except a few rows of cells at the top, and this is so easily overcome that a suggestion is not



P. Merconchini and his extracting force ready for work.



FIG. 1.—Latest form of the Ferguson uncapping machine. Entering the points of the knives at one end of the frame.

necessary. * * * We must have one of our own next season. It works well and fast, and leaves the combs in ideal shape. * * * I did not sharpen the knives while here. I thought several times I would; but upon examination I found them as keen as they were when they arrived. * * *

We put up in all, while your machine was here, 24,000 lbs., and the uncapper was run over every comb that it would uncap, even a portion of the combs, so you can tell about the amount of service it gave us.

The above amount refers to "bulk comb," so the amount uncapped would be the amount necessary to put up that quantity of "bulk comb."

Another beekeeper who had the machine wrote me in part as follows, and his criticisms are those most frequently raised:

There are many thin combs with irregular surfaces that the machine will not get at. Another thing, one could not use the machine on combs containing any sealed brood.

If I understand the above, it means extracting combs thinner than those of sealed brood; and I am free to admit that satisfactory results could not be obtained under such conditions. The facts of the case are that neither of these men had made any special effort to secure thick combs for use

with the machine; and Mr. Wilder especially, I understand, uses eight frames in an eight-frame super, securing a slight increase in thickness by leaving out the division-board, so it is easily seen that the results are not such as would be obtained where the proper preparation had been made.

The one element of uncertainty is whether or not beekeepers can and will produce combs that bulge $\frac{1}{8}$ inch or more beyond the top-bar for about two inches down. The form of the knives will not admit of their cutting in abruptly under the top-bar; but they must pass straight down for about $1\frac{1}{2}$ or 2 inches, or until their heels have passed the top-bar, and then they are automatically forced in toward each other until they are just far enough apart to pass the bottom-bar so they will take care of any ordinary irregularities in the central and lower parts of the combs where they are most apt to occur. This style of knife has now been used long enough to prove beyond doubt that it is successful and practical.

I will admit that bulged comb can not be secured without some special care; but I do know that I can produce such combs, and uncap them easily, at the rate of ten frames per minute; and a speed of twelve to fifteen frames per minute would not be hard to attain, I am sure, after one becomes somewhat expert in handling the machine.

I find that eight frames in a ten-frame super are about right for good results; and after the combs have once been built out and uncapped, each later filling and capping is bound to build them out enough to insure a good clean job of uncapping.

Harvey, Ill.

BEEKEEPING IN THE SEMI-ARID REGIONS OF OKLAHOMA, KANSAS, AND NEBRASKA

How Sweet Clover is Being Developed

BY E. R. ROOT

Business and other reasons called me into Oklahoma and Kansas along the latter part of January; and in our Feb. 15th issue I promised to write up the beekeeping conditions in those States, saying I thought there were exceptional opportunities for the development of new bee territory alongside of those immense acreages of alfalfa in the valleys. In accordance with the promise then made, I present a few observations, with particular reference to Oklahoma, where I spent most of my time, in the vicinity of Stillwater. Here resides Mr. F. W. Van de Mark, Secretary of the Oklahoma Beekeepers' Association, and Prof. San-



FIG. 2.—Withdrawing the uncapped frame from the super.

born, Entomologist at the Oklahoma Agricultural College.

I do not know of any State in the Union that offers greater promises in an industrial way than Oklahoma. Its cities and towns are growing by leaps and bounds. Immense beds of asphalt and coal have been discovered there. Gas and oil wells are being put down in many places throughout the State. Agriculture is developing at a rapid rate, and beekeeping is one of the industries that has a future. The trains are loaded with home-seekers and butchers and bakers and candlestick-makers, suckers and fakirs rushing to the land of gold and sunshine. I said "suckers." I do not know any other term that adequately expresses the large class of people who buy land out in that western country, some of which is worthless, and buy with their eyes shut.

Let me say as I have said concerning Florida and every other new State that is being rapidly developed. There are fakirs and suckers by the hundreds; but having said this, there are some excellent opportunities for men of brain and caution to invest in land that will bring some splendid returns. But there are other lands that will take a lifetime before they will bring the price that has been paid for them. Not until the population of Oklahoma becomes congested and elbows touch will this land not so good be developed. In this connection let me say that there is a great deal of

difference in the productiveness of land in Oklahoma and Kansas. Some of it will yield immense crops, and some of it poor crops. Pictures showing some fabulous yields, accompanied with photos or half-tone engravings, are sent out broadcast over the country. They catch the eye of the get-rich-quick fellows, who, of course, swallow the bait, hook, bob, and sinker. They leave a good job in the East, sell out, and move their families. There are hundreds of such families who have been robbed of their hard-earned money. It makes one's heart bleed to see them stranded on poor or worthless land, and no money to go elsewhere. The land shark got it all. And while GLEANINGS is willing to show that there are splendid opportunities in some of this western country, it also enjoins caution. Do not take the statement of the man who has the land for sale. Spend a little time in the country, and gather all the information you can. There are thousands of honest men who will tell you the truth if you will take pains to look for it. This is not only true of Florida and Oklahoma, but other States in the Union.

Now, then, how about beekeeping in Oklahoma, and I might also class with it Kansas, for the climate and soil of the two States are much the same? Alfalfa is being grown in both States as it never was before. The Kansas farmer once supposed that the only thing he could raise was corn;



One of J. J. Wilder's apiaries, made up of Caucasian and also Italian colonies, run for the purpose of proving which are superior.

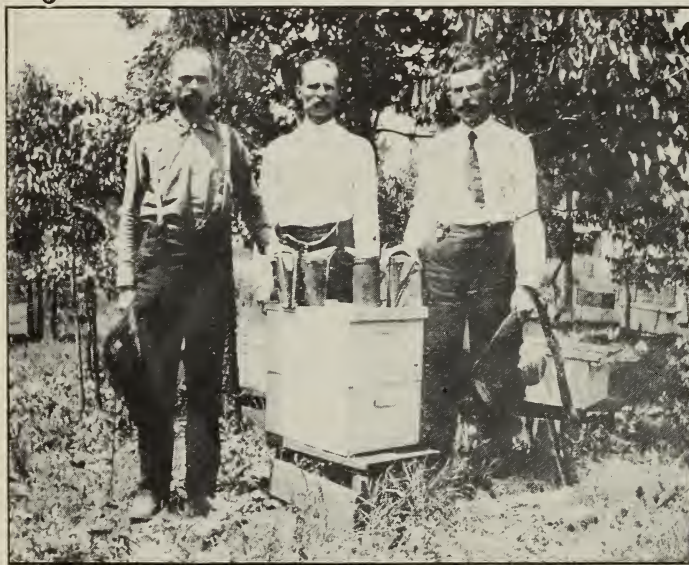
but he is now discovering that alfalfa will grow along the creeks and rivers—that is to say, in the valleys where it will yield immense crops, of sometimes three or four cuttings in a season. What is more, this semi-arid country does not have to depend on irrigation, which sometimes fails further west. Its own creeks and rivers water the valleys on both sides, and the dwellers in these valleys are becoming prosperous, and largely on account of alfalfa which enables them to produce meat. With the present

a home-seeker's ticket with the privilege of stopping off, taking in the territory of both Oklahoma and Kansas. Let him stop a few days at a number of hotels. Let him inquire carefully where alfalfa is grown. Go over the whole territory, and then after returning home let him fix on some location, and make a start in bees where no one else is located.

Another promising thing in both States is that farmers are beginning to find that sweet clover will grow on the uplands, and furnish a fine hay and pasturage for sheep,

hogs, and cattle. In fact, sweet clover will grow on these uplands where it was supposed that nothing but prairie grass would thrive. But sweet-clover pasture I am told will support a much larger number of hogs and sheep than even alfalfa, because it can be cropped down closer without killing. There is bound to be immense development in this legume, in these semi-arid regions, in the next ten or fifteen years; and the early bird if he looks before he leaps will be the one that gets the worm.

In Oklahoma we find that cotton can be



J. J. Wilder, the late Mr. Herlong, and Mr. English.



L. E. Thoen's apiary in apple-blossom time.

grown in a large portion of the State; and cotton is an important honey-plant. It works in very nicely with alfalfa; and while the honey is not the best, it is very much better in color and flavor than has been commonly supposed. Professor Sanborn, before mentioned, has discovered that cotton yields not only honey but honey-dew. But I will not say more about this, because he has made some discoveries that he will make public later on. Permit me to say that Professor Sanborn, Entomologist of the State, is one of the most progressive men in his profession. He is a beekeeper by birth and training, and an entomologist. He is doing every thing he can to foster the general bee business within the State. He has a small State apiary for demonstration purposes, and apiculture is one of the courses taught at the institution.

THE INDIAN QUESTION.

Once or twice at the hotels I ventured to talk about the Indian question in Oklahoma. Finally one man across the table, observing that I was a tenderfoot, said to me, "Young man" (I am nearly 51). "the less you say about the Indian question, the better for you." Then dropping his voice down to a whisper that I could just catch, added, "It is a *redhot* question, stranger—much hotter than the negro question in the South. Believe me, no matter which side you take, you will get into hot water."

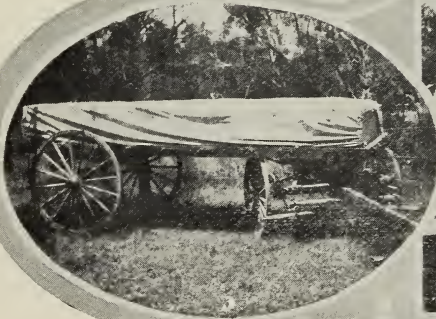
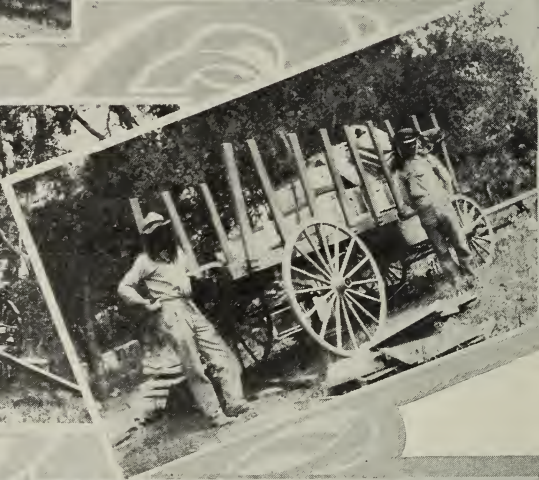
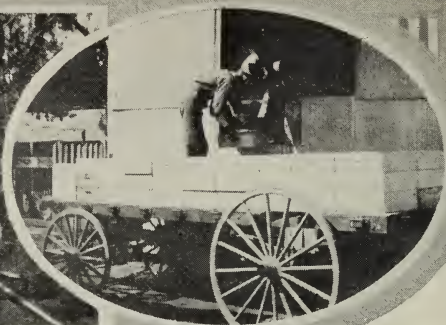
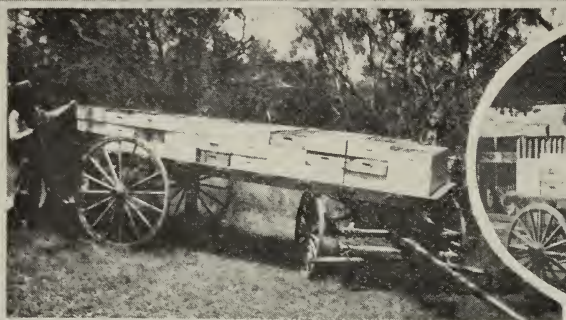
I put out several "feelers," and found that he was right. I may say, however, at

this distance, that the Indians own valuable lands in the western part of Oklahoma—lands that have immense deposits of asphalt and coal. Some of the Indians are immensely wealthy. They have no conception of the value of a dollar. The white man is fleeing them right and left with all kinds of devices. Uncle Sam's agents are trying to protect them, and it was hinted that *some* of them *might* be open to bribes. Certain it is, the Indians are losing their lands, and the white men are getting possession. From the standpoint of industrial development this is, no doubt, a good thing; but from the standpoint of equity and right it is wrong—that is, providing the white man cheats his copper-skinned brother out of his just rights.

Why is the Indian question a "hot one?" Because it is mixed up in politics, both State and national. Honest men have different opinions, and some men not so honest are biased by selfish schemes.

There will doubtless be considerable inquiry concerning Oklahoma and Kansas, and so I take pleasure in referring to two men who are not interested in the sale of land who may be able to give some information; but perhaps they will not thank me for giving them this kind of publicity. However, I will take the risk: F. W. Van de Mark, of Stillwater, Oklahoma, and Carl F. Buck, of Augusta, Kansas.

Shortly after the Feb. 15th issue of GLEANINGS was out, I received a couple of



Scholl's handy apiary wagon.

letters from subscribers in Kansas, who, fearing I would make too rosy a description of the semi-arid West, wrote, suggesting caution; but I am happy to state that the article above was written before the letters came, and so I think no one will accuse me of booming new territory if he reads all I have written, especially what I have said above. There are good and bad lands, and there are sharks and honest men. The wise man will use his own judgment as he thinks best. Here are the letters:

In GLEANINGS for Feb. 15, page 106, you refer to alfalfa yielding honey in Kansas. This is true of a good many localities in the State, but not all. In the country immediately surrounding Topeka it is only occasionally that bees will work on alfalfa bloom.

At our State beekeepers' convention this year the honey reports ran anywhere from ten to one hundred pounds per colony. Most of the heavy yields came from localities where alfalfa is grown for seed. It seems to be a fact that, where seed-growing is profitable, conditions are such that the plant secretes considerable nectar.

A man who has a favorable alfalfa location in one of our western river bottoms said that, in his locality, alfalfa could be depended upon to yield nearly all season if it was on land where water could be reached at a depth of ten feet or less, while alfalfa on higher ground could be depended upon to yield only after a refreshing rain.

Alfalfa is particularly susceptible to atmospheric conditions; and any one not familiar with the peculiarities of this plant would be apt to go astray.

North Topeka, Kan., Feb. 24. A. V. SMALL.

The following is a private note to the editor, not for publication, but as it states the "other side" I give it here without the name and address.

I believe it wise to go very slow about advertising Kansas as being great for bees. There is no class so easily stampeded as beekeepers, on account of being able to move what they have. The sight of alfalfa does not imply bee locations by any means. I have alfalfa on my farm. My neighbor has fields 18 years old; but I never saw a bee on it, nor have I even seen a pound of alfalfa honey produced in the eastern part of Kansas, and I have lived here 35 years.

Where alfalfa is grown for hay it is not much of a success for bees. Where irrigated, which is very little in Kansas, and where grown for seed, there is not much of any flora to build up with; and then in these last-mentioned districts, the winds!

Sunflowers and cottonwood along the streams, and wheat and corn districts are nothing to start a stampede on. Kansas is a great State agriculturally, but a mighty poor place for people of moderate means to make a start, as our farms are large and the land valuable. I am of the opinion that a matter of location is one to approach with care. I am of the opinion, also, that any thing of extensive transitory or non-resident beekeeping would be a flat failure in Kansas or Oklahoma; besides, such beekeeping would be conducive to disease.

SUBSCRIBER.

I know of places in your State where alfalfa does yield honey.—E. R. ROOR.

WINTER CASES MADE OF OLD BOXES

BY L. E. THOEN

I am sending a photograph showing part of my apiary on the 28th of April, 1910. Most of the hives, as shown, still had the winter cases on. Those cases were not very slightly, as they were made of all kinds of lumber. There was a space of two or three inches between the hive and the case on all sides except the front, and also a few inches on top, to be filled with packing, a tight cover completing the case. The bees wintered as well with these boxes around the hives as they do in the more expensive outside cases that I am using at present, which are built of inch lumber, with a telescope gable top of the same material, the latter covered with galvanized iron acting as a roof.

Spearfish, S. D.

MORE ABOUT CAUCASIAN BEES

BY J. J. WILDER

Owing to the great variation in conditions which season and location bring about in the beekeeping industry it is possible to advocate too strongly some particular feature, such as stock, methods, or conveniences. It may be that I have advocated Caucasian bees too strongly; yet, on the other hand, possibly not enough has been said about them in our bee publications. Many have tried them, and very few have condemned them. In the majority of cases where they have been thoroughly tested they have been found superior to any other race of bees. In some instances they have even revolutionized beekeeping, so they must have a high commercial value, and must be here to stay.

Each season for a number of years, except this spring, I have been rearing and selling queens of this race of bees. This season I could have sold more than 1000 queens, and most of these to the same old customers; but since I have decided to go into very extensive beekeeping I will not offer any more queens for sale, but will use all I can possibly raise in my own apiaries. Since they have met with the approval of so many, are fast coming to their own, and have so completely changed beekeeping for the better in my own experience, I can not withhold my pen. I have tested these bees very extensively, and from time to time I have made known what I have found about them, good or bad.

I want to emphasize again two of their superior qualities—viz., that for honey-gathering and of rearing large quantities of

bees throughout the season. I will do this through the testimony of another beekeeper whose experience exactly coincides with mine.

Mr. J. J. Wilder:—How are your Caucasian bees holding up? Are they still leading the Italians in real business? Mine have, and in this location of no honey they average me 50 lbs. surplus while my neighbor's eight colonies of Italians stored no surplus at all, and, besides, dwindled to only four colonies.

Another beekeeper near by had 108 colonies of Italians, and they decreased to 47, and he had to resort to feeding nearly all summer. It is plain that the Caucasians gathered honey from some source while these two lots of Italians were perishing.

Then, too, they kept their brood-nest chock full of brood all through the season, and I doubled the number of colonies and got an extra set of combs built in the supers. It would have done you good to see the great stream of bees going and coming from each hive while the honey-flow lasted.

I imported some queens this season direct from the Caucasus, and the workers are uniform in color, and not a trace of yellow about them, nor are they dark in color, but a dull gray, and are as striped as zebras. They are hustlers too. I am going to make a specialty of Caucasians, for I believe that they are the coming race of bees. My friends in the North say that they winter well and do not dwindle in the spring as do the Italians or their crosses; and, besides, they are gentler, and will stand more abuse and neglect. I have always found them good, even under the most adverse conditions.

CHARLES W. QUINN.

Houston Heights, Texas, Nov. 11.

One of the illustrations is a snapshot of our first Caucasian yard along with some other races and strains of bees which we had under test side by side. The result of the test was that the Caucasians had more to their credit for our purpose.

The other view shows the corner of the same apiary and three beekeepers who had just finished examining all of the colonies in the yard for the purpose of ascertaining which strain of bees was giving the best results. The Caucasians scored the highest number of merits.

The man standing on the right is Mr. English; and the man in the middle is the late Mr. Herlong, both extensive beekeepers of Florida who also adopted the Caucasian bees and found them superior. The writer is standing at the left.

Cordele, Ga.

A MOST HANDY APIARY WAGON

BY LOUIS SCHOLL

After having used a handy wagon that is well suited for almost all purposes in an apiary, it is hard to understand how a beekeeper can really get along with any other kind of wagon with which to do his hauling. Planning to haul bees or hives, supers, or cans, on a farm wagon or with only a small spring wagon, caused many a hes-

itation before the hauling was finally done. With our big handy wagon, all there is to do is to hitch up to it and then load and do the hauling, no matter where and when.

The group of pictures shows a full platform spring wagon with a capacity of from 2000 to 3000 pounds at a load. The bed is entirely flat, like that of a large float, 14 feet long and 48 inches wide. It is provided with removable stakes which can be put on in a few minutes. The wagon runs so easily that there is hardly any jarring of the load, and it is not necessary to do any tying to keep the load from falling off. This makes the wagon especially well adapted for hauling bees, and also for hauling large loads of supers with the foundation already in the frames. The bed is long enough to accommodate two rows of ten-frame hives, making 20 in a tier. A double-deck load of forty colonies can be hauled with ease with a team of two animals, and the entire load hauled on a trot on good roads. This enables one to make quick moves of an entire apiary in short order and without the usual disagreeable troubles about packing and jogging with unsuited wagons. All that is necessary in the case of moving bees is to set the hives on, placing them back to back, with the entrances out, preferably, so that these can be watched and be easily accessible in case of leaks. It is very easy to unload from such a wagon also.

For hauling our bulk comb honey from the yards, this wagon has proven very valuable. In the pictures the wagon is shown right beside the apiary fence in two places, with the wagon-bed entirely empty in one case and a wagon-cover on another. The supers are loaded right over the fence on to the wagon from the apiary as soon as these are taken off the hives and freed of bees. By loading them three tiers high, 60 supers are loaded on, making a load of about 2400 pounds. The whole is covered over with the wagon cover or sheet as soon as the honey is loaded on, and tied at each end as shown in the two lower pictures. In the two upper pictures the unloading is shown right from the wagon into the honey-house. In one the large screen-door is wide open; but in the other only a small opening is left (because of robbers), through which the honey is passed to a man inside.

In another picture the wagon is shown with the stakes in place for hauling covers and bottoms and other bulky things without having to tie any thing with long ropes. By going from one yard to another, any thing that is needed at any particular one can be taken out as needed, without useless untying of ropes, etc.

It will be noticed in all the above pictures

that the horses are not attached to the wagon, except in one instance. In this one the driver has just arrived at an apiary and is unhitching to take the team aside to a safe hitching-place. Always do this, since there is no telling when the bees might sting the team and cause considerable trouble and disaster. Especially should this be watched in time when bees are robbing badly.

To get the load away from the apiary when bees are robbing, and it is not safe to hitch direct to the wagon, a long stout rope is used to which the horses are hitched. This has a large hook at the other end, which is hooked to the end of the wagon-tongue, and the load is pulled to a safe distance from the apiary, where the team is then hitched to the wagon.

New Braunfels, Texas.

SHIPPING FRAGILE ARTICLES

Some Advice from One who has had Experience

BY JAY W. GEE

Inasmuch as the writer's first knowledge of GLEANINGS, and a subsequent interest in the bee industry, was a direct result of a broken case of bee supplies it may not be amiss to repay the debt to the fraternity by giving my experience in the transportation business, covering about ten years. Some years ago I was agent for a railway at a point where a heavy transfer business was done, from five to twenty cars being handled daily. There was a white foreman who checked the freight, and had the general supervision of the platform; but all the trucking and actual handling of the shipments was done by a gang of negroes, all of whom were illiterate. It was not possible for me to be on the platform every day; but I would make an inspection as often as possible. One day while looking over the situation I found quite a pile of curiously sawed little sticks lying by themselves around a post, with no case near, no mark on any of them, and no possible way to connect the sticks or make any thing out of them.

I called one of the boys, "Tom, what's this you have here?"

"Fo' God, Cap, I dunno. Yistiddy when us wuz unloadin' the St. Looie cah, Pete, he dun drap a box from the flatfom an hit bust wide open, an all them sticks come out. Us wuz goint to put 'em back, but the boss lowed 'twont no use, fur some feller had jess put em in dat air box fur trash to get rid of, an Pete say dey sho would make good kindlin', an' dun bunn bout haff ob 'em dis mawnin'."

There was a little magazine lying near which I put in my pocket for future reference; for I am like the ancient Athenians in one respect at least—always on the alert to learn some new thing. The little sticks found their way to the stove; and a few months later, after I had perused the little magazine—GLEANINGS—and some other bee literature, the mystery of the little sticks was solved. The railway company had unintentionally used a nice lot of frames and other fixtures for stove kindling, and in due course paid the claim, I suppose. The shipment went beyond me for final delivery, so I can not say as to that. If there is a moral to this particular incident, I suppose it is that the various railways of the country should have all their employees take a course in bee culture, and so reduce the amount of their annual claim budget by avoiding a recurrence of such mistakes in the future.

Now, you old-time beekeepers need not be amazed at such gross ignorance outside of your ranks. The biggest part of the losses that the railroads and the public sustain is caused by the ignorance of one party of the methods and working tools and parts of the other. This is not any disparagement to any one, either, for in one short life it is impossible to master all the details of every calling, trade, or profession.

The purpose of this article is not to urge the use of any system in behalf of such system by reason of any interest of mine in it; but it is purely a matter of information that may be of help to some of the many readers of GLEANINGS.

Before I began working for the railroad I spent two years in a postoffice of the third class on the main line of one of the transcontinental railroads in Oklahoma. The biggest part of our mail was put off from the through trains. There was a grade just beyond our little town; and in order that the heavy trains might cross it without stalling they had to go at full speed by the station. When the sacks were kicked from the mail-car they would sometimes fly thirty or more feet away, and it was not safe to be in their path. It was a sickening sight, sometimes, to go through these sacks and to see the condition the contents were in. I remember one Christmas morning in particular, when the sacks were dumped on our work-table, there was not a single package intact, the whole being an indiscriminate mass of doll limbs, scalps, dresses, tin soldiers, wrecked cars, and the like. Whether the practice yet obtains, I am unable to say. Of late I have received several fragile packages by mail from long distances without damage; but the outer packing had not been

crushed. I have noticed several reports in the papers since the parcel post has been in operation, where eggs have been sent through the post and have been broken.

The cause is not hard to find. The post-office officials have not yet made sufficient arrangements for the handling of this business; and until the Department is fully prepared to take care of all kinds of business it would be better for the public to use a safer method than the open mail for fragile matter. To label a package "With Care," or "This Side Up," is absolutely useless, as few ever see it, and fewer pay any attention to it when they do see it. A swift glance at the address, and flop it goes into the sack it belongs in, whether a foot away or ten. Registered matter receives better treatment, being handled personally from one clerk to another. In a few years, when the express business is owned by the government or supplanted by parcel post, all parcels will be handled with the care that they deserve, and that they now get from the private express companies.

Handling fragile matter by freight, whether by carload or less, is still more unsatisfactory. Of late years the railroads have been burning their candle at both ends—through no intent of their own, be it said, but because it has been forced upon them by federal and State laws. Rates have been reduced, and no prospect of any advance, while every item of railway operation has steadily advanced in cost, especially material and labor; consequently every manager, every superintendent, and every boss of every kind, to hold his job has to exert eternal caution to keep expenses down. The usual devices are to cut labor, hours, materials, and improvements. Where special knowledge is not required, the very cheapest labor is used. In the South that means negroes; in the Southwest, Mexicans; in the East, Italians or other foreigners. Now, what is the result when your case of honey is marked "Glass"? The inscription is never read; and if it should by accident be read it receives absolutely no attention. A car holds just so much. In time of a car famine every available piece of freight is put in, and seldom with regard to any consideration except to fill space. Of late some of the systems have been making an effort to remedy the careless loading of freight in an effort to cut down the enormous amounts being paid for claims, but the progress is slow.

But suppose that the case is properly loaded, or that there is a carload shipment. Dynamite used to be handled indiscriminately with other freight, and the loss of life was so great that the federal government

had to step in and regulate it, with the result that last year there was not a single death from this cause in the whole United States, so a federal inspector recently told me. Every case of dynamite or other explosive now has a big red label on it. It is braced in the car so that it can not move, even if the car is wrecked and turns over. Nothing that can easily catch fire or explode is allowed in the same car. Furthermore, the car is inspected, large tags are put on every side, and the car placed in the safest part of the train.

Now, if all this can be done for dynamite, why can not something similar be done for honey? It is worth taking up in the next national convention. Suppose that a certain color, whether painted on or pasted it makes little difference, be used on the tops of all honey-packages, a regular system of bracing be agreed upon, and, in the case of carloads, placards be put on the outside of the car to let switching crews know the fragile nature of the lading. Too much should not be asked of the roads, as a raise in rates would follow; and whatever is agreed upon should be with the understanding that the shipper be required to furnish every thing, and perform all the extra labor incident thereto. I add this because it will be useless to ask any railway management at this time for any thing that will add any expense to their burdens, which are already too heavy.

To be continued.

Drones from Drone-layers; Are They any Good?

I have some fine Golden queens that I raised from a breeding queen last fall, and they did not mate. Now they are laying drone eggs. Will those drones reared in drone comb be all right to breed queens to? Kendallville, Ind., March 31. O. P. ELDRIDGE.

[Drones from drone-laying queens are not generally regarded as the equal of drones reared from ordinary normal queens. A good many doubt whether they have any potency at all; but it is generally believed that they are better than no drones. If a virgin queen were fertilized by one of these drones the probabilities are that the result of that mating would not last as long as though she had been mated with a drone from a normal queen.

Drones from queens that have formerly laid worker eggs, and yet later lay only drone eggs, are good. We have used them extensively, and have reason to believe they are all right.

However, we are frank to say to you that no scientific experiments have thus far been conducted to prove whether drones from drone-laying queens are the equal of those from the ordinary average queen. Possibly the Bureau of Entomology, Washington, D. C., may find its way clear to give this matter investigation. Microscopic examination of the seminal sacs of the drones from drone-laying queens and drones from the ordinary normal queen would doubtless show whether the former had as many spermatozoa as would be found in the other drone. Ed.]

Heads of Grain from Different Fields

Extracting Close and Feeding; the Price of Beeyard Labor

With our plan of producing extracted honey, the bees and brood are kept together throughout the season. At the last manipulation the queen with a small patch of brood is put into the lower story with an excluder over it; and all the surplus chambers, filled with the brood and empty combs, are put on over the excluder. With this plan the brood-chamber never becomes clogged with honey; and the question is, What is the best method to employ in getting winter stores to a colony? Whenever we believe the last honey gathered from basswood to be ripe, we begin the work of extracting. When the supers are taken off, the brood-chambers have all the way from a very little to about twenty pounds of honey in them. In this locality the flows following the basswood run barely supply the daily consumption of a colony.

Our object in writing is to learn if our method of carrying a colony over into the next season, to a time when the bees can gather what they consume every day, is as practical and efficient as any that could be employed, so far as feeding is concerned. By exchanging combs with the bees we aim to supply our lightest colonies with at least ten pounds of honey at the time of extracting, and two full combs of honey are set aside for next spring's feeding. Early in September we begin the work of feeding up for winter, with a feed made up of the following proportions: boiling water, 1 part; cane sugar, 2 parts; 1:3 as much honey as water. We are well equipped with large feeders that hold more than any colony will ever need for winter stores. The wagon, used for transporting the feeding outfit, is arranged to carry 100 feeders, the necessary sugar, honey, and a water-heater of 160-gallon capacity. The capacity of the heater allows the heating of sufficient water to make feed enough for an apiary, and still leave room for a rack which can be set at varying heights from the bottom of the boiler, and on which the five-gallon cans containing the honey for feeding can be set and heated. By means of a large gate, boiling water is drawn from the heater into a large mixing-tank, and the honey and sugar added. The feed from the mixing-tank is also drawn, by means of a large gate, into large graduated pails having large snouts to facilitate pouring the feed. The water is put on to heat, and is ready for use by the time the feeders are on the hives; and, with two men working with a vim, a large number of colonies can be fed up in short time.

Colonies run for extracted honey are always in more or less need of winter stores; and to supply this want by giving them combs of honey in the fall seems impractical to us, therefore we adopted the plan outlined above. Then, too, we can buy sugar of excellent quality for feeding purposes at \$1.50 below retail prices. We use powdered cane sugar that is swept up on the floors of the sugar-mills. This sugar is free from dirt, but contains about one per cent of starch.

We are great believers in an abundance of stores; and your candid opinion, on our method of supplying winter and spring stores, will be cheerfully received. We could have given you a great deal of detail, but did not think it necessary. This will be the first season when we shall have to employ outside help; and as we are not posted on the wages beekeepers have to pay, we should like to ask you in regard to this also. What wages could an intelligent, trustworthy man who works steadily with the speed of an average person, and who can do very satisfactory work of all kinds in the workshop, and carry out any kind of orders in the beeyard, but who has not had sufficient training to take the initiative, be paid

per month, including good home, board, and washing, in a locality where farm hands receive \$30.00 and dairymen from \$35.00 to \$40.00 per month? Again, how much more per month can a beekeeper demand than a farm hand, other things being equal?

E. L. HOFMANN.

Janesville, Minn., March 25, 1913.

[The plan outlined seems to be correct so far as we can see. There are only two ways by which you can supply a colony with stores after extracting. One is to equalize stores by changing combs, and the other is to feed. But in your particular case it would be more practicable to extract close and then feed.

Your method of feeding seems to be all right; but did you ever try the plan of making up the feed at home, and pouring it into 60-lb. square cans? A wagon is necessary to carry your melting-apparatus, sugar, and honey. You can carry all the syrup you need in square cans unless the yard is very large. By so doing you will need to carry only one-third more of the actual bulk in water. It sometimes transpires that it is inconvenient to get water at an outyard. If there is a dearth of honey it is impracticable to make the feed at the outyard, any way. However, we employ both methods, making the syrup at the yard; but more often we find it convenient to carry the syrup, and then it can be given to the colonies while hot.

The question of beeyard labor depends somewhat in outside labor, as you suggest. A competent man in the yard, one capable of going ahead alone, who knows how to put colonies in condition for a harvest as well as extracting and taking off comb honey, will command about double the price of ordinary labor. In some cases you may have to pay three times as much. A thoroughly competent man who can manage a series of yards so as to make money for his employer is hard to find, for the reason that, if he can earn money for the other fellow, he will prefer to be his own boss, and make the profit for himself.—ED.]

Uniting by the Alexander Plan Not Always a Success; Mating Queens from an Upper Story Generally a Failure

Is the Alexander plan of placing weak colonies over strong ones in the spring for the purpose of building up, a recognized success? Is anybody getting virgin queens mated in the second story over a queen-excluder? With me, both schemes are failures. Last summer I got lots of queens hatched in the upper story (over queen-excluders), but not one fertilized. In less than a week they disappeared.

This spring I put weak colonies over strong ones —i. e., Alexander's plan. Four days later I found queens of weak colonies all right, with a big force of bees. Two weeks later I found no eggs, no unsealed brood, no queen, except in one instance, where the queen of a weak colony was doing fine work; but the queen below the excluder had been killed.

Dixon, Cal., March 17.

J. T. BOWEN.

[The Alexander plan of uniting is not a success in the hands of every one. Some have succeeded very nicely with it, while others have met with failure. In some instances, at least, this failure is due to the fact that the directions given by Mr. Alexander have not been strictly followed. For example, he specifies that the two lots of bees—the weak and the strong colonies—should be put together, one on top of the other, very gently, so as not to disturb them. If too much smoke is used, or if the bees are disturbed, the queen in the upper hive will be destroyed. It is also very important to have a little brood in the upper story. If the nucleus is so weak

that it has only a few bees and the queen with no brood, the plan can not be made to work unless another frame of brood and bees is added to it. For full particulars on this plan of uniting see "Uniting," in our A B C and X Y Z of Bee Culture.

The plan of having virgin queens mated from the upper story of a strong colony generally results in failure. It sometimes works, however, during a light honey-flow. Even Mr. Doolittle himself does not advocate it now except under certain conditions. In any case the average beginner will succeed very much better by having his virgins placed in separate hives by themselves.—Ed.]

How to Know Honey-dew

Some are inquiring how to know honey-dew. If honey-dew is heated, there will be a scum about two inches thick. Skim this off and continue heating, and it will keep on throwing up froth indefinitely. If boiled, I fancy it will all go to froth.

If bees can have a flight once a month they will winter on honey-dew. When one-third of my bees died with it in the cellar, a few years ago, I uncapped the combs in the spring and gave them to the bees, and they built up finely on the "bug-juice." It is dangerous only when bees can not have a flight. If any beekeepers find that their hives contain honey-dew, and they are in the cellar I would advise them to carry the bees out the first day they can fly, and again in not more than one month's time.

Islington, Ont.

J. D. EVANS.

[We might suggest that there is some honey that will throw up froth after boiling, as well as honey-dew. We do not, therefore, believe that the rule suggested by our correspondent is infallible. The best test is the one of taste and color. While there are some honey-dews of fair quality, the most of them are very inferior, not to say nauseating, having a dark color, or purplish black. Nearly all honey-dew honeys have a sort of flavor that is common to all, although there is a honey-dew from Hawaii that does not taste like the American article; it reminds one more of New Orleans molasses. Chemically, however, it has the same qualities as the American product.

It may be true that bees can be wintered on honey-dew if they can have a flight once a month; but sometimes a winter will come when they can not have a flight for three months. For that reason we strongly advise extracting all honey-dew and feeding sugar syrup in the fall, for all localities north, we will say, of the Ohio River.—Ed.]

Best Time of Season to Requeen

I notice reports from different sections, of bees using up stores in early breeding. Not so, however, in this locality.

We look for a bumper crop of honey this year. The prospects are the brightest for it that I have ever seen. There is more white clover than there has been for a decade.

I have a few two-year-old queens that I should like to replace with young ones. What would be the best time to do this—at the beginning of the harvest or near the end of it?

Mr. DeMuth, in his article on comb honey, recommends the dequeening of colonies that are preparing to swarm, and letting them rear a queen or giving them a laying queen in ten days or two weeks. Will the bees work with as much vigor during this period of queenlessness as they would otherwise?

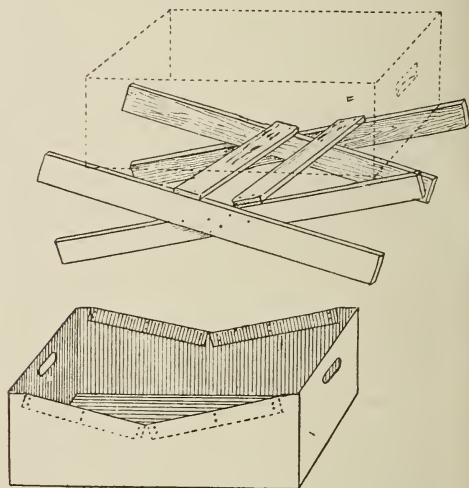
Weston, W. Va., March 3. ADDISON GOULD.

[Mr. DeMuth is about right in his suggestion concerning requeening. The best time to raise queens is during the swarming season, when large swarm-

ing-cells can be secured from colonies that are doing good work in the supers; for we would not use even swarming-cells unless from a colony of good workers. Removing a queen, however, in the height of the honey-flow, has a tendency to check slightly the activity of a colony; but if the colony can have a vigorous virgin coming on, it will work almost as well as if it had a laying queen. But there will be danger that it will swarm out when the virgin takes her wedding-flight. As a general thing, however, where one has to buy queens he will find the best time to requeen is along in July and August, when queens can be secured at a low price, and when the interchange of queens will cause no interruption to the colonies. Then we always like to have young queens in the hive in the fall. Such queens will lay in the fall when old ones will stop laying entirely. A lot of young bees in September and October is an important factor in good wintering.—Ed.]

A Super-rest

I am sending a drawing of a simple article which I find very convenient. I call it a super-rest. The upper drawing shows a sawhorse arrangement which is easily made by any one. The lower drawing shows a box which is about as simple to make, and will hold smoker, tools, etc. The upper one shows a super



in place. The two ends of the holder should be about 16 in. apart. I find this a great help when examining hives, as I can place this near the hive, usually in front, and set the super or supers on it. It saves crushing bees, and your super will not fall over as they will do when set on end.

Mystic, Ct.

ELMER E. WAITE.

Honey Crop Practically a Failure in Australia

The honey season in Australia can be written down as a failure so far. While there have been isolated instances of good yields, the record generally is none at all, and bees dying or doing very little. There is a great shortage of pollen; and unless this alters very materially during the next six weeks the mortality of bees during the coming winter will be very great. The whole failure has been due to drouth; and now the rain has come, and the weather prophets say we shall get wet weather for another six weeks, or until the end of March. If this proves true, the outlook is not bright, because the season will be at an end by then in all places except the northeastern portion, where a flow from ti-tree can be expected.

Some beekeepers have lost all their bees, and some a portion through what is generally known as the disappearing disease. It is a sort of dwindling disease where the hive is left often with three or four frames of brood and plenty of honey, but no bees. I have never examined any of these hives to see if they had a supply of pollen. If not, that would account for the whole trouble. I will follow this matter up if I get the opportunity, and see if it is pollen shortage.

MAJOR SHALLARD.

South Woodburn, N. S. Wales, Feb. 10.

How to Inspect Hives for Foul Brood when Robbers are Bad

Please state how to inspect an apiary of several hundred colonies of bees all in a rush by inspector, preparatory to moving to another State before the honey-flow. This you said not long ago is easily done without starting robbing. I have never found any way yet. A tent helps but little.

New Plymouth, Idaho, April 4. J. O. BAIRD.

[If you are at all troubled with robbers, or if you desire to do your inspection work at a time of year when they are hovering about the hive, you will find it very slow work, and somewhat dangerous too, because a single robber can carry the infection to its own hive. Under such conditions we do not know of any thing better that you can do than to wait until a day when it rains just lightly enough to prevent robbers from flying, and at the same time allow you to open the hives and inspect every inch of the brood in the combs. A light rain does not interfere with the work, except that the bees are a little crosser. You will have to use a little more smoke; but when there is a light rain on, you can work much better than you would naturally suppose. If you can't wait for it to rain we would suggest that you work after dark. Get a small acetylene bicycle-lamp. Start it to going, and then have an attendant hold this lamp so it will shoot its rays right on your frames of brood that you are examining. You will find that you can work at night much better than you would naturally suppose. No robbers will bother you at this time, and you can examine every inch of brood. Of course, we should very much prefer daylight, because there is nothing equal to that kind of light for inspecting suspected brood. Looking over a whole apiary to inspect foul brood is a very slow operation, for the reason that every bit of comb in the hive must be thoroughly examined if there is any brood in it to see whether the brood has any diseased cells. Even suspicious cells must be examined carefully to see whether any diseased matter is below the capping. This kind of inspection work takes a great deal of time.

We remember once spending nearly an hour looking over a hive where we thought there must be foul brood because we could smell it. We could find nothing of the disease, and finally we saw one suspicious cell that was capped over. With a pin we raised the capping, and, sure enough, under it we found a typical case of dead larva from foul brood.—ED.]

Mold in Double-walled Hives and None in Single-walled

I have been raising bees for several years, and, I am glad to say, at a profit. Last year I began using some double-walled hives, and upon opening one lately I was surprised to find the lower half of six of the ten frames moldy, and forsaken by bees. The upper half was filled with honey capped over. The bees were crowded to one side of the hive on four frames which were partly filled with honey and new brood, which showed the queen was all right. The hive had plenty of bees in it for this time of the year: in fact, it was the strongest colony I had examined this spring. On the bottom-board there were about a handful of dead bees lying in a certain

moisture that was too thick to be called a puddle. Now, was this moisture caused by sweat? and did it cause the comb to mold? What I want to find out is whether the moldy combs are fit to be left in the hives, or should they be destroyed and hives furnished with new frames? I found upon further investigation that all the double-walled hives I had bees in had one or two moldy frames, while several of the single-walled ten-frame hives I have looked into are free of any mold.

Baltimore, Md., April 3. MARK R. DELAHAY.

[This mold will do no harm—in fact, we are apt to find it on the combs of strong colonies just after a spell of long winter confinement. The probabilities are that the colonies in your double-walled hives were stronger than those in the single-walled. If that were the case it would be easy to account for the presence of mold in the former and not on the latter. In our climate a colony in a single-walled hive will dwindle down and become comparatively weak, while in a double-walled the colony will hold its strength and sometimes be stronger in the spring than in the fall. However, it is a fact that most colonies wintered outdoors are not quite so strong in the spring as they were the previous fall. Now, then, if your colonies in the single-walled hives were weaker than in the double-walled hives, it would be very easy to account for the presence of mold in the former rather than in the latter.

Yes, the moisture is caused by the breath of the bees. Where there is a large powerful colony in a hive it will send out considerable dampness. This strikes the cold air at the entrance, and condenses and runs down the bottom-board. In a single-walled hive a colony will not be as strong, as a rule, and not strong enough to send out much moisture; and the consequence is, there will be none found in the hive.—ED.]

Honey for Making Labels Stick on Tin

On page 232 you recommend dextrine for pasting labels on tin cans. By your recommendation I purchased some, but found it worthless to stick on tin. I use a flour paste mixed with equal parts of honey and water, which sticks a label on tin so it is impossible to remove it without soaking. Use a light honey, as dark honey will stain through the labels after a time.

Grosvenordale, Ct., April 5. ERNEST RYANT.

[There is a great difference in dextrine. Some will give good results and some will not. Perhaps, however, a common paste made as you describe, with honey in it, will be the equal of any thing. A good many have spoken of the value of honey as an ingredient in any kind of paste or mucilage for sticking labels on tin.—ED.]

Antics of Pollen-laden Bees

In the spring of the year when the bees are gathering their first pollen, the pollen-laden bees will come to the entrance of a hive containing a colony with a queen, and enter the hive hurriedly, as if they had been sent for. Some of the pollen-laden bees will go to the entrance of another hive, and will almost enter. Then they will come back out again, and then take wing, doing this repeatedly—sometimes entering the hive, but always coming back out again after a time, as if they were searching for something. That colony is queenless, without a doubt.

BEES SWARM IF THEY THINK THEY ARE CROWDED.

Bees will positively never swarm if they think they are not crowded for room. The facts in the case have nothing to do with it. They might have an abundance of empty combs in the supers, and get it into their heads that they were crowded for room in the brood-chamber, and swarm.

Jonesboro, Ind., March 12.

C. A. NEAL.

Capturing Swarms from Limbs of Trees

Last Thursday, June 22, I was spraying my apple-trees. Early in the afternoon I became aware that a swarm of bees was near. I heard them some time before I saw them. As soon as they came in sight I threw my old straw hat among them three or four times, and then began to throw dirt. After following the swarm as far as the river, the bees seemed to stop for a moment in the air, as if uncertain, then swung to the right and clustered on the limb of a sycamore standing on an island in the river.

While they were settling I went after a twenty-foot ladder and a saw and smoker. The ladder was long enough to reach the first limb of the tree, but I found that the limb above it was just beyond my reach. By walking out on the first limb, however, I found that I could swing over to a small tree, and, by climbing that, I could reach the second limb of the sycamore. I then went up without any trouble. I discovered that the tree was hollow, and that the main crotch was open. The bees had settled there, and I could touch them by reaching down my hand the length of my arm.

I first tried to smoke them out, but they did not respond to this method of treatment; so I called to one of the neighbors, whose house was near, asking her to telephone to my wife, directing her to bring me a brace and bit. By making use of these new means of warfare I bored a $\frac{3}{4}$ -inch hole below them, and they began to move. I then placed a small box in the crotch of the tree; but the bees sought refuge in flight, and clustered on a good-sized elm, away out on a large limb, ten feet beyond reach.

I tied some twine around the limb and saved it off. The bees then clustered in two places—one section in the top of a small group of maples, the other on still another large limb of the elm. I sawed the large limb off; and when it struck the ground the bees joined their companions in the top of the maple-tree. This was within reach of my ladder, so I found it an easy matter to cut off a few small limbs and hive the bees.

The next day one of our neighbors telephoned that there was a swarm of bees in their dooryard, which I could have. In the evening another neighbor reported that a swarm of bees had alighted on their cornfield fence, and that if I wanted them I could get them and pay whatever I thought they were worth. I found them on a rail. They seemed to be at work, as they were flying to and fro. After I have hived them I found a very little comb on the rail.

Union City, Mich.

JOHN L. SWAN.

[Much of the nuisance of climbing trees and chasing swarms a mile or so crosslots can be avoided by clipping the queen's wings. However, it sometimes happens that a swarm will go out with a virgin from a cell that has escaped notice, and then there is nothing to do but to go after them, whether they may be up a tree or across the fields. If any one can invent a process for getting a swarm out of an inaccessible place on a high limb, he ought to be awarded a gold medal. It is sometimes nearly worth one's life to climb a tree, to say nothing of getting the swarm and bringing it down after securing it; and some swarms, after they are captured, are very ugly. When the limb is in the right position, one can slip a bag up under and around the swarm, tie the bag around the limb, and then let the limb down. But more often the swarm is located out on the end of a branch where it is impossible for any human being to go. To saw the limb off has a strong tendency to dislodge the bees; and if the limb is a large one it can not be handled, even after it is cut off. All of this emphasizes the importance of clipping, or using drone-traps; but clipping is much to be preferred. —Ed.]

Bees Wintered Outside Have Opportunity for Early Flights when They Can Get Pollen

In GLEANINGS for April 1 some one asks why it is that bees commence brood-rearing so much earlier when wintered outdoors than when wintered in the cellar; and also asks if it is not because of difference in temperature. Allow me to suggest that it is not due so much to difference in temperature as because of other conditions. Bees wintered outside, if they have opportunity for flight, are more vigorous than when wintered in the cellar, and will be likely to commence brood-rearing sooner. And, again, with a very late winter flight or a very early spring flight, they may secure more or less pollen, which is an inciting cause of brood-rearing.

If bees are taken from the cellar in February, and given a good cleansing flight, and then returned to the cellar again, I think that brood-rearing would be started as soon as though they were wintered outdoors.

Evanson, Ill., April 3. WM. M. WHITNEY.

[It does not always happen that outdoor bees will have more brood in early spring than those that are wintered indoors. Last winter our inside bees reared brood earlier, and had more of it when set out, than the bees outdoors. Why it was so will be discussed at a later time.—ED.]

Bees Working on Shorts as a Substitute for Pollen

I have been much interested in watching the bees gathering shorts, for, in lieu of pollen, my bees have been foraging in the stables all over town the last few days after the ground feed. Several persons have told me that there were so many in the stable that they thought there was a swarm. To-day I placed some shorts in a pan in my beeyard, and some of the bees soon found it. They seemed to be afraid to alight on the feed—at least so I thought, but I found they would fly down into it and gather all they could in their mandibles and on their feet, using their feet to push the shorts into their mandibles and on their tongues, which latter were extended all the time. They would then rise up an inch or two, and with their feet brush off their mandibles and tongues, and pack the material on the pollen-baskets on their hind legs, repeating the operation till they had a load. They were not still an instant, wings and legs working rapidly all the time.

I have often wondered how they could pack the dry meal on their legs; but they seem to moisten it with their tongues, and then pack it on, using all their legs in doing so. I have never before had occasion to furnish my bees with artificial pollen; but we are having summer weather just now, and there are few flowers in bloom, so the bees are ravenous for some substitute for pollen.

Nederland, Texas, Jan. 23.

J. H. WEEKS.

Origin of Custom of Beating Tin Pans when a Swarm Issues

With reference to a recent statement in GLEANINGS about the practice of making a noise with pans, etc., when swarms are on the wing, and the origin of the custom, allow me to say that this is a relic of an old English law which says that any beekeeper, by giving notice to the public in this manner, has a legal right to follow a swarm wherever it may go so long as he can keep the swarm in sight. If, however, the beekeeper loses sight of his bees after giving this warning, they become the property of the person on whose land they alight.

J. C. BOOTH,
Second-class expert of the British Beekeepers' Ass'n
Rensselaer, N. Y.

Our Homes

A. I. ROOT

Be ye clothed with humility.—I PETER 5:5.
Blessed are the meek, for they shall inherit the earth.—MATT. 5:5.

Charity is not easily provoked . . . beareth all things, believeth all things, hopeth all things, endureth all things.—I COR. 13:7.

When I first began reading the Bible with an enlightened conscience years ago my good wife was often shocked and almost alarmed because I not only smiled but sometimes laughed outright. The good woman had been brought up to look at the Bible and every thing pertaining to it as something so sacred and solemn that one should not only look sober, but grave and serious when consulting its pages. Some of you may remember that years ago one scarcely smiled in prayer-meeting; and to laugh outright there, would have been considered a grave breach of etiquette. Things have changed. Well, I think it was when I was reading the "beatitudes" that I laughed, especially when I came to the 44th verse of the fifth chapter of Matthew, where we read, "Love ye your enemies; bless them that curse you, and do good to them that hate you," etc. The thing seemed so unnatural, and I do not know but it seemed to me then so *utterly unreasonable*, that I laughed outright at the new presentation of this wonderful truth. I soon put it in practice, or tried to do so, and the older readers will remember the victories that I achieved by following out the teachings of that chapter. One would think after these years of experience along this line that I, A. I. Root, the author of these Home papers, would not be likely to be ensnared, especially in the 73rd year of his life, after having taught the doctrine of returning good for evil for close on to forty years.

I am going to tell a story of my conflict with the enemy in two different ways; and I shall try hard to make both of them truthful. It occurs to me right here that I want to ask grace and wisdom from on high while I tell my little story. May I be clothed just now with that garb of humility mentioned in our first text, even if that garb was allowed to drop off and be trampled in the dust for a little time.

I think I have mentioned before in these pages that some of the boys in Bradentown had a fashion of hanging on behind my automobile. At first I did not mind it much; but when too many of them hung on, it hindered progress and I ordered them off. Mrs. Root asked me if I was not a little harsher in my demand than the occasion required. I replied that it was an outrage,

and that nothing but severe talk would make the boys behave. Later on, when I had a flat tire they loaded down the machine so the engine could scarcely pull it. At this I ordered the boys off the vehicle, and told them to get clear away, and in terms not very gentle. A good many times I put on speed and ran away from the boys; but after dark they would slip up unnoticed; and before I thought about the cause, I imagined there was something wrong about the machinery. Finally one night on my way to prayer-meeting, when I was obliged to slow up on account of some piles of material for repairing the road, they stopped the machine entirely. They not only got hold of the springs behind, but they grabbed hold of the wheels, stopping the machine so I had to crank it to get under way again; and as soon as my attention was taken up by running they stopped me again. I threatened to have them arrested, but they replied by shouts of merriment.

I got to meeting late. My conscience began troubling me; but I defended myself by saying that the good of the community demanded that the boys be arrested for laying hands on my property and interfering with my free passage of the street. I consulted neighbor Rood, who is a fairly expert attorney (or has been), as well as market-gardener, and he is also superintendent of the Presbyterian Sunday-school. Friend Rood declared it was an outrage. He said the only thing to do was to get the boys' names. I told him that none of them would give me the names of the ring-leaders. He said if it were himself he would get out and "chase them down." Said I, "Mr. Rood, have I the legal right to lay hands on any of these boys, even under such circumstances?"

"Mr. Root, I would chase them up, and lay hands on them without any regard to the law."

I think he added something more; but my conscience began to utter a vigorous protest. I think that the little alarm-bell I have told you about in times past began to ring out pretty vigorously, to the effect that A. I. Root, who writes these Home papers, would be sadly out of place chasing schoolboys, even if they did run out of the schoolyard to annoy him in passing along the street with his automobile.

I went home and prayed about it, and asked the dear Savior in plain words if I should chase the boys. Almost before the

words were uttered the answer came, strong and distinct, "No."

"Dear Lord, shall I complain to the sheriff about the boys?"

The answer came clear and plain as before, "No."

Once more, "Shall I scold them or threaten them with arrest?"

Again came the decided "No."

At this point I asked Bro. Rood another question:

"Mr. Rood, do you know or have you heard of the boys interrupting or annoying anybody else who drives an automobile on our streets? I suppose there are a hundred of them or more in and around Bradentown. His reply was, "Mr. Root, I have never heard of their interfering or interrupting anybody else."

I told him that this pointed out the fact that I was at least *partly* at fault if not entirely so; and I went home to consider the matter. Shortly after, I ran on to the following in the *Sunday School Times*. Read it, and see if you can catch on to where it hits your case.

TRANSLATING COMMONPLACE TRUTH.

When any truth seems commonplace to us it has lost its power for us. How can that power be restored or discovered? Coleridge gives the secret when he says: "To restore a commonplace truth to its first uncommon luster, you need only *translate it into action*." "Blessed are the meek" is one of the familiar promises that often has little appeal; but how it bristles with surprises and with power when it is turned into action! Every promise of the word may be found to contain the life-giving Spirit of God when it is translated into the uncommon language of life.

Let me now tell my little story again, relating some facts I have neglected in the above.

Years ago, when I got my first automobile, or "Oldsmobile," rather, it had a back seat; but the passengers on the back seat were obliged to ride backward. To get on this back seat there was a step not very far up from the ground. To get on to this step there were iron rods to grasp hold of on each side. Now, this back step was exceedingly handy for carrying parcels, merchandise, etc., and we liked to use it for that purpose. This back step was removable; but when we tried leaving it on all the time we soon discovered that it was a great temptation to mischievous boys. Even when going at considerable speed a boy could grasp hold of the iron rod and swing on to the seat. This sort of sport was attractive, because one could thus get aboard very much as a conductor dextrously swings on to the steps of a fast-moving train. The boys soon became very expert; and while here in Medina we left the step at home because the boys would load us down. I had

the machine shipped down to Florida. But I soon found that the boys in Florida were not particularly different from the boys in Medina. At first I wanted to be pleasant and good-natured to the boys, and permitted them to ride; but when it began to be too much of a burden for the old machine, I asked them to get off. Some of the boys heeded my request. Others did not seem disposed to move; and if they did get off, as soon as my back was turned they got on again.

In this way, and with an old machine, I educated the schoolboys to be ungentlemanly. When I got a new Sears automobile they recognized *me*, even if they did not the machine, and began climbing on behind. I finally scolded, and then threatened. I forgot my religion. My cloak of humility that I usually wore was neglected, and fell from my shoulders. Satan saw a chance, and he followed it up. There is an old adage to the effect that it takes *two* to make a quarrel. At first I defended myself by saying I was entirely right—the fault was *all* with the boys. Moses has been called, I believe, the meekest of men. Just once in his life he became angered, and forgot himself and his dignity before the people. He said to the grumbling children of Israel. "Ye rebels, must *we* now fetch you water out of this rock?" I, like poor brother (?) Moses, forgot the text I have been quoting to you for lo these forty years, and was quarreling with the boys. I think there is an old saying that goes something like this: "It not only takes two to make a bargain, but it takes two to make a quarrel." The boys were unquestionably rude and in the wrong; but I too had been rude and in the wrong or else there would not have been any quarrel. Let me digress a little.

Years ago, as our readers will remember, I was an enthusiastic truck-gardener—at least in an experimental way. One year my hobby was nice Hubbard squashes; and knowing from former experience of the fight I would have with the bugs I provided some square boxes, one for each hill. These were made by nailing four shingles together so as to make a square box. The thin end of one was tacked into the thick end of another; and these square boxes were covered with cheese-cloth, and kept in readiness one particular spring; but, lo and behold! the bugs did not trouble us that season—at least not one had been seen until a warm spell about the last of May. But one Saturday night, just about sundown, after my help had all gone home, a great swarm of bugs camped down on my precious handsome squash-plants. I rushed to the house,

and on my way I mentioned to Mrs. Root what had happened. She said something like this:

"Oh dear me! Is it not too bad that they should come Saturday night, and after your help has all gone?" But when I looked up and replied, with a smiling face, that "to tell the truth, *I was glad to see them*," she looked at me with something of the same astonishment she did when she heard me laughing, when I was reading the Bible.

"Why, dear husband, you do not mean that you are *glad* to see those swarms of bugs come here late Saturday night, do you?"

"Yes, my dear wife, I mean exactly what I say. *I am glad to see them*."

I was anxious for an opportunity to *test* my proposed remedy, and it proved to be all I had hoped.

Perhaps I might tell you right here that, about the time I was having my tussle with the boys, our good pastor of the Presbyterian church asked me to lead the prayer-meeting on the following Thursday night. The subject he gave me was "Christian humility." Perhaps I startled some of the good friends on that prayer-meeting night by telling them the above story and adding that I was at that very time praying for grace to say to the next crowd of boys who came near, just as I said to the bugs. "Boys, *I am glad to see you*." And I asked the friends to pray for me that I might have grace to say from the bottom of my heart, to say it truthfully, "Boys, I am glad to see you." I began to think, just as the time was nearing to go back to my Medina home, that no boys were going to come near. I realized that I had undertaken a big job. Just take a look at it. Suppose a gang of hooting and yelling schoolboys looking for fun somewhere should say, "Let's hold up that old gray-haired gent who wears a fur cap, and hear him scold. He does not know our names, and he can not harm us much any way."

Years ago, after kneeling with my poor friend Fred, whom I have told you about, on the cold stone floor of the Medina jail, and after poor Fred had prayed for himself, he took a look at that text I have been talking about—"Love ye your enemies; do good to them that hate you," etc. He said something like this: "Mr. Root, that may be all right. Perhaps it will work out as you say; but I tell you it goes awfully 'agin the grain.'" And Fred was right. It does go "awfully agin the grain" even to *try* to love our enemies; and I felt it when I approached the conflict. I told Mrs. Root I hoped the boys *would* test my Christianity at least once more; and I

told the honest truth. I did not want the boys to do wrong and be uncivil to the traveling public; but I did feel anxious to have an opportunity to show that I was a changed man—changed at least in *some* respects, as poor Jacob was changed after wrestling with the angel. The test came. The boys, three or four of them, with mischief in their looks, ran down and held on to the projecting springs at the back of my automobile, while two more of them grasped the wheels; but when I slowed up and looked at them pleasantly they were astonished. They had planned for harsh and severe words; but they had not planned for the soft answer that "turneth away wrath." When they saw I was pleasant, and had not a word of reproof for them, they looked at each other in perplexity. What could it all mean? They retreated a little, thinking that may be I had some firearms or something else. When they stood off a little distance at the side of the road I did not tell them in so many words that I was glad to see them. I feared they might think that it was only sarcasm; and the Holy Spirit instructed me that sarcasm has no place in the heart of one who is "clothed with humility," as in our text. I simply scraped up grace enough to say, "Boys, one of my tires is in bad shape, as you will notice. I expect to go north soon, and am trying to get along with it as it is until I go away. I do not believe you would willingly hinder me under the circumstances, would you?"

At this unexpected turn of affairs a little chap looked toward an older one who seemed to act as leader. He simply said, "Don't meddle with it, boys, any more." Then they turned and went away. Years ago I said, in considering this subject, that returning good for evil is a great *unexplored region*, and that the world had not yet even dreamed of what could be accomplished by heaping coals of fire on the heads of our enemies. I have taken a good deal of space to give full particulars of the above transaction, because it carries a tremendous moral. You see how easily I could have fanned the flame of hate. Inadvertently I had started the boys in this way of having sport at the expense of somebody else. I confess, my friends, it is a pretty hard pill to swallow, to treat such conduct as *fun*, and avoid stirring up strife. The boys had the advantage, because they could come up behind when I could not see them. They could have their fun under the cover of darkness. Having them arrested and put in jail might have aroused their bad feelings so they would have retaliated by cutting my tires or otherwise damaging my automobile. This

has happened more than once. Judge Lindsey, who has done so much for the boys in Denver, Col., by looking at things from *their* standpoint, has taught us some wonderful lessons; and these lessons are taught all over our land by great and good men who are stepping down a little, and standing beside the mischievous and fun-loving juveniles.

Just now our State of Ohio is discussing a proposition from the brewers to punish the boys found in saloons, if they are under age, instead of punishing the saloonkeeper. The latter entraps the boys, coaxes them into his place, and then these poor misguided boys would be fined and imprisoned for breaking the law while the saloon-keeper goes scot free. May God be praised that the evidence, as I now write, points to a failure of this scheme of the brewers. Now, my good friends, to come right down to practical work, how many times have *you* fanned into flame a quarrel between your-

self and your neighbors instead of quenching the flame and seeing it die out along the line I have indicated?

In making this little personal matter public, perhaps I shall expose myself to more trials. If so, may God give me grace to keep pleasant, and put up with whatever little persecution may follow. As a goodly number of our journals go to Bradentown and vicinity it would not be strange if some of those same boys would get hold of it and decide to give me a harder trial than I have had yet; and may the dear Savior give me grace and wisdom to remember that these very boys are the ones for whom he suffered on the cross that they might live. Just one thing more: I was going to say that I am one of the meekest and humblest of his followers, but I do not merit that distinction yet; perhaps I may, however, before I die. May the dear Savior give me grace to say as he said, "Father, forgive them, for they know not what they do."

Poultry Department

DUCKS AND CHICKENS IN FLORIDA—SOMETHING ON THE OTHER SIDE.

Mrs. Root is continually telling me that there is danger of my leading people into error by giving only the rosy side of most things; and she says I have not mentioned some of the difficulties with ducks and chickens in Florida, especially for those who, like ourselves, spend only the winter here. Just now, for instance, in the middle of April, when I am planning to go back to Ohio, I find it difficult to find somebody who "wants the job" of caring for the poultry until I get back here next November. One year I let a neighbor have the grown-up fowls for the eggs, and he thought he did fairly well. I paid him only for the trouble of taking the fowls home and bringing them back. The next summer, however, when there were a lot of "youngsters" also, it was a different problem. The year after, another friend kept my grown-up fowls during the summer. He said he could not tell whether the eggs paid for the feed or not; but as he was a particular friend he made no bill for the trouble or feed. Just now, however, nobody seems to want them. As I have sold off my old hens, there are only about 125 chickens, young and old. A dozen of them are about four months old. In Florida they rarely begin laying before six months of age. Well, under the circumstances I offered to furnish *all the feed* and give the neighbor the cockerels for taking care of them. There will probably be fifty

or sixty roosters that will bring, say, half a dollar each when they are large enough; so he will get from \$25 to \$30 for just seeing that they have feed in their galvanized tubs, and that the windmill keeps the water "dripping" all the time. He also has the eggs laid by 25 ducks for the work of shutting them up nights and letting them out mornings.

From the above you will probably notice that I had better sell my chickens in the spring when I go back north, and buy some more when I get back in the fall. But here is the point: I have a special strain of a cross between Buttercups and White Leghorns that I like better than any thing else. This cross not only seems to give more eggs than either before crossing, but so far there has been a smaller percentage of males than pullets. And right in here comes another difficulty with the Indian Runner ducks, especially in Manatee Co., Fla. Up in the North, growing green ducks for the market is a great industry, and people pay big prices for these green ducks ten weeks old. Not so down in Florida, for here there is a prejudice against ducks, young or old. The women folks all say it is a lot of work to get them ready for the table; and the people at the meatmarket say the same thing. In fact, nobody will give as much for a fat young duck down here as for a chicken. We do not care particularly about selling the *ducks*, young or old; but the *drakes* in every flock must be disposed of in some

way, or they will "eat their heads off." I sold a few year-old drakes, that I did not need, for only 8 cts. per lb. because nobody would give more. They weighed about 5 lbs. each.

Now I have told you the worst side of the poultry business—first, getting the chickens not old enough to lay kept through the summer, and keeping the old ones through the moulting season; second, in the duck business, getting rid of the surplus drakes.

The duck-books tell us that people can be *educated* so as to appreciate and pay for green ducks; and they also tell us about experts who will pick a duck and get it ready for the table in *three or four minutes*, while Mrs. Root declares it takes a good part of the whole forenoon; and she has consulted other women who feel a good deal as she does about it. And she thinks a nice fat chicken is ahead of a duck after it is ready.

CHUFAS FOR CHICKENS.

In answer to Mr. A. T. Cook's letter, April 1, I wish to say a word about the chufas. My father's family used to object to planting chufas close to the house, for we always thought that meant "no eggs." But one spring my father planted a little over an acre of chufas near the house in some rich cow-pens, and just as the nuts began to mature the chicks took to them, and, to our surprise, we got *more* eggs than we had ever got before, in the fall and winter.

Cody, Fla., April 14. HENRY F. STAFFORD.

Friend S., I am very glad to get the above, for the reason that one of our neighbors in Florida thought his hens stopped laying just because they had access to a plot of ground where he had been growing chufas; and if I am correct there has been a sort of notion, as you say, that chufas are not good for eggs, and we have now two instances showing quite conclusively to the contrary. I am glad; for if true it cuts out the expense of harvesting the crop. If I am correct, the chufas may remain in the ground, especially in localities where there is no freezing, for a considerable length of time without injury. We are giving them a further trial.

HAWKS AND CHICKENS; HOW A TEXAS WOMAN DOES.

Mr. A. I. Root:—Many a time I have been tempted to write to you after reading your Home talks in GLEANINGS. These Home talks always interested me, and after reading about your trouble with hawks I want to tell you my way of scaring them away.

Last fall and winter I hatched with an incubator over 200 chickens. Some of them disappeared during day time. For some time I could not believe that a hawk caught them, as I never saw any close around the house. After I had lost between 25 or 30 my son noticed a hawk catch a chick and fly off with it. The day after, I saw the same performance myself. The hawk must have been pretty high up in the air, for I was in the yard, where no tree or shrubbery was in my way. All of a sudden he came straight down, about 35 or 40 yards from where I stood, grabbed the chicken, and off he went with it, almost

like a streak of lightning. After that we watched for him and shot at him several times, but failed to get him.

Then I fixed up several scarecrows as follows: I took a pole about six feet long; got some of the boys' old clothes, slipped a stick through the sleeves for arms, nailed this on the pole, then slipped the trousers over the pole (just one leg, and let the other hang loose). Then I made a head of rags, and fastened an old hat or cap on it; then fastened a bright tin lid from lard-buckets, with a cord on the end of each arm. The wind will keep these lids in constant motion, which seems to frighten the hawks. I set up these scarecrows against a fence or bush, and sometimes drive a slab in the ground and nail it to that. I have six of these guards around my premises in different directions as far as the little chickens go.

These guards are no beauties, and people laugh at them in passing; but I don't care, for they certainly frighten the hawks away. I have not lost a chicken since I put them up. There is no expense about it, and no more worry.

A man told me a few days ago that, if you put up a pole about 12 or 15 feet high, nail a stick about 5 feet long across the top, and fasten tin lids on the stick, it would answer the same purpose. May be so. I have not tried it.

I keep only the Silverlaced Wyandotte chickens. They are fine layers all the year. I wish I could see your hen-houses and other fixtures. I am the only one of the family who likes to work with chickens, and consequently I am not fixed up for poultry-raising as I should like to be.

Mrs. GRANT ANDERSON.

San Benito, Texas, April 23.

The above reminds me that my neighbor Abbott has a similar device, but he uses cheap looking-glasses or pieces of broken mirrors instead of tin. I must confess that I rather dislike to see scarecrows very near the home; but I think I would put up with a good deal as Mrs. A. does, rather than lose chickens at the rate she did; and I believe it is generally true that when a hawk, vicious cat, or other animal gets into the fashion of having a chicken dinner every day it will usually follow it up unless something is done.

HAWKS AND CHICKENS; COTTON STRING INSTEAD OF NETTING.

In your issue of April 1 Mr. A. I. Root tells of his experience with little chicks and those hated marauders, the hawks, and how he covered his runs with netting wire to protect the young poultry.

We have found a very simple mode of protection which works like a charm in keeping away the hawks that live around Wachusett Mountain here in central Massachusetts, and pass it on to you with the hope that others will try it and find it successful. The ruse is this:

We string crowline—white bundle twine will do if one has enough—across the open spaces where the hawks have been in the habit of swooping down, fastening the line on buildings, trees, posts, etc., high enough above the ground to be out of the way of pedestrians, cattle, and teams. We have never known a hawk to venture beneath or between these lines. Apparently they are plainly seen by him as he soars about on the wing, and he suspects a trap has been set for him. I hope other poultry-raisers in other localities will try this way of keeping these marauders away, and find a happy success. It is a far less unsightly procedure than hanging heterogeneous collections of cast-away articles before the eyes of passers-by—a way of attempting protection that often fails to save the precious chicks.

MASSACHUSETTS READER.

Health Notes

ROBBING SICK PEOPLE.

In this age of life we have; thank God, a great variety of reformed people. We have repentant and reformed grafters, reformed saloon-keepers, reformed drunkards, and reformed gamblers; but a good friend of GLEANINGS just now sends a clipping from the *Weekly Kansas City Star*, giving at length the confessions of a "quack doctor." This doctor gives the method in detail by which men of his class bleed their victims. The patient is first required to take a bath before the examination; and while one quack examines (or pretends to examine) the nude patient, another quack examines his pocketbook, and looks over all the papers he can find in his pockets to learn, as far as possible, how much the victim will stand bleeding—that is, financial bleeding. The plan is to get (to adopt a railway phrase) "all the traffic will bear," no matter whether there is real or imaginary trouble. To tell the real truth, the quack doctor would not know and really does not care. The patient is always assured that it was a lucky thing that he came to a competent physician—that unless something was done, and that at once, he had only a few months or weeks to live. Of course, this quack institution has a variety of instruments, electrical, chemical, etc., so as to make a big show; and, to be brief about it, instead of studying up ways and means to *help* the patient, they go through a great variety of performances to squeeze out the last copper the patient has.

Now, I have been through this very thing during the past fifty years; and, to be frank, my opinion now is, on looking back, that about all I needed (most of the time) was to get out in the air and sunshine and to get into a good perspiration by doing some useful work before I sat down to my desk, to attend to correspondence, etc. This "confession," and I feel sure it is a true one, almost makes the chills run down one's back to think that any human being should be so depraved as to resort to any such despicable means to get a poor man's money—money that he has worked hard for—without giving him any sort of equivalent. The highwayman knocks a man down and rifles his pockets; but he generally selects somebody who is measurably able to take care of himself; but these thieves hunt up people in the last stages of consumption, or some other incurable disease, assuring them that, in a few months or weeks, by *their* special treatment and wonderful(?)

discoveries they will make him as "sound as a colt." A part of the paraphernalia consists of putting the patient on a stool with glass legs, and giving him electricity; examining his blood under a microscope, and then telling him his case is hopeless, and that, if he had only come three months sooner, they might have helped him. But they finally make a further examination, and tell him that, if they get *right to work*, there *may be* a chance to save his life. If I am correct, however, our good Uncle Samuel is getting after these chaps, and I hope he will make it hot for them, and do it speedily.

I am rejoiced to see that the World's National W. C. T. U. has sent out a four-page leaflet in regard to medical frauds. I copy below the first two of the 24 mentioned and described:

What is Sanatogen?

According to the manufacturers of it, 95 per cent of it is casein, the curd of milk, and five per cent sodium glycerophosphates. The *Journal of the Am. Medical Association*, Feb. 19, 1910, says that one dollar's worth of Sanatogen is equal in food energy to six cents' worth of milk or one cent's worth of flour. There is nothing harmful in Sanatogen, but there is great waste in buying milk-curd at such a price.

What is the Oxyopath or Oxygenator?

This little device, for which \$35 is asked, is said to pump oxygen in vast quantities through the pores of the skin. All physiologies teach that the power of the skin to take in oxygen is extremely limited. Oxygen enters the lungs through the nose and throat. This is amply proved by the quick death which results when the intake of oxygen is shut off by pressure on the windpipe. The Oxygenator, the name of which was later changed to Oxyopath, was examined by Vermont State Board of Health, which declared that it was merely a piece of pipe, resembling gas-pipe, nickel-plated, with the hollow interior filled with a rough mixture of iron filings, clayey material, and coke-dust. This Board of Health forbade its sale as a fraud. The commonwealth of Australia forbids its importation as a fraud. As claims are made for this costly and useless device to cure even so dangerous a disease as diphtheria, the public should be warned everywhere against it. The "cures" attributed to it must be of the "mind-cure" variety.

What do you think of charging a dollar for a little "cottage cheese" with a string of testimonials from great(?) doctors? In regard to Oxydonor or Oxygenator, our older readers are doubtless aware GLEANINGS has been fighting this fraud for fully twenty years. If Vermont can forbid the fraud, why can not our whole United States protect her sick and suffering people, who have no means of detecting humbug and trickery from real sense and science. God bless the W. C. T. U. "Long may they wave!"

High-pressure Gardening

THE REJUVENATION OF ORCHARDS.

Our Ohio Experiment Station has just sent out a most valuable bulletin, No. 240, on the above subject. I have not space to make as many extracts as I should like; but I am going to give you a single paragraph from the last page of the book, as follows:

Previous to 1909, Washington Co. was buying her apples for home use. In the year 1909 a number of demonstration experiments were started in the southern part of the county by the Ohio Experiment Station, as well as in a few orchards leased by private parties from a distance. The income of the county, from the sale of apples in 1909, from unsprayed orchards, was less than \$5000. In 1910 the income increased to \$65,000; in 1911 the income from the apple crop advanced to \$200,000. The work has but fairly begun. It is the marvelous spectacle of the reawakening of a practically lost industry in a section where that industry was, many years ago, one of considerable importance.

The above very fairly illustrates what is going on of late in the way of making old neglected orchards good for something. Just think of it! A county that has been *buying* apples, after a little care of its old orchards has actually *sold* \$5000 worth. In just one year from that time they made a tremendous jump up to \$65,000; and in just one year *more* they made another jump that almost takes one's breath away—\$200,000.

SWEET CLOVER, AND INOCULATING CLOVERS IN GENERAL BY NITROGEN BACTERIA, ETC.

At present writing, May 1, almost if not quite all the agricultural papers of our land are recognizing and giving place to articles on sweet clover. From the *Prairie Farmer* of May 1 I clip the following:

GLUE METHOD "FOOL PROOF."

H. L. Kendall Co., Ill., writes:

"I should like a little information in regard to inoculating clover seed by the glue method. I expect to sow a few acres this spring just to try it, any way. The wild plant grows very rank along the road on the south side of this field, also some on the east side. Might not the field receive inoculation from this? I should like to know how much dirt I should use per pound to get the desired result."

If the surface water runs over your field from where the sweet clover grows, you would probably in time have the sweet-clover bacteria thriving throughout your field; but when it is so inexpensive, and so little trouble to be sure about having artificial inoculation it is foolish to take any risk in getting a natural inoculation.

The glue method is not only cheap and easy, but it is nearly "fool proof"—that is, it is not necessary to be very particular about all the details to have it successful in its results. A pound of glue may be dissolved in a gallon of water or in two or three gallons of water, without any appreciable difference in the results; and a quart of dry dirt or a gallon of dry dirt may be sprinkled on the seed after they have been moistened with the glue water. As a rule, about a quart of dirt may stick to the seed, and the rest of the dirt may be screened out or not, just as you prefer, as the amount of dirt is not ma-

terial, if there is enough. In preparing the dirt, however, a little care should be used to secure it from a place where the bacteria are active, as shown by the nodules formed; and if the host plant, in this case sweet clover, has grown in the same place for several years the inoculation will be better. This dirt should not be dried in the sun, as direct sunlight is fatal to bacteria of nearly every kind. The dirt should be finely pulverized and sifted through a fine sieve, but this is not much trouble, as so small an amount is used.

The natural inoculation carried by water from high land is likely to be spotted and unevenly distributed, while the inoculation from the dirt-and-glue method is carried by the dirt to each and every seed, and the bacteria are ready for work as soon as they can sufficiently develop.

In the case of small seed, like clovers, a solution of one pound of glue in two gallons of water is satisfactory, and then the solution is so dilute not many lumps of seed are formed by sticking together. If there should be, it is easy to rub and screen them out.

FRANK I. MANN.

Please notice from the above that the expensive methods advocated of late by our government and all our agricultural papers, recommending transporting soil from where sweet clover has been growing to their fields, promises to be done away with. Instead of a ton of earth, you do not need more than a quart or such a matter. The above is certainly a short cut, and our thanks are due to the *Prairie Farmer* for having given it to the world.

"AND A LITTLE CHILD SHALL LEAD THEM."

Some time ago I said our boys and girls would soon be outstripping their fathers in growing potatoes as well as corn. See the following from *Rural New-Yorker*:

CHILDREN'S POTATO CROPS.

On page 344 is an article entitled "The World's Potato Record," and I thought if that was considered a record perhaps some of your readers might be interested in a record that some of our boys and girls made last year, so I enclose a report that was published in a local paper at the time. This contest was started by myself; but a committee, composed of a member of the Y. M. C. A., the Chamber of Commerce, the County Superintendent of Schools, the Grange, and the Agricultural College were asked to and did help with the contest. Two hundred and twenty-seven boys and girls entered; and in spite of bad weather, blight, and other discouragements, 85 came clear through and made their showing at the fair held for that purpose. The plot of ground was one square rod, and no potatoes were counted that were dug outside of the 16½-foot limit. The judging was on a basis of 60 points for quantity, 25 for quality, and 15 for essay. The best yield was 587 pounds; second, 535 pounds; and then there were several in the four-hundred-pound class. This year the contest is State-wide, and includes, besides potatoes, wheat, oats, corn, and peas, besides stock-judging and school-garden contests.

Washington.

C. E. FLINT.

The first prize was won by Arthur K. Collins. On his rod of ground Arthur raised 587 pounds, or at the rate of 1565 bushels per acre. His prize was a scholarship at the Agricultural College and a \$15 account in a bank. Charles Banner won second prize, \$50 worth of land and \$10 in cash. He raised 535 pounds, or at the rate of 1440 bushels per acre. One of the girls, Jeannette Gilmore, raised 342 pounds, or 920 bushels per acre.—ED. R. N. Y.

Temperance

THE NEXT ADVANCE—A CRITICISM ON THE PROHIBITION PARTY AND THE ANTI-SALOON LEAGUE.

Mr. Root:—I notice the reiteration in GLEANINGS of Chafin's unkind fling at the Anti-saloon League, and I for one raise a protest. Since 1888 I have steadily supported the national Prohibition nominee for no other purpose than to crystallize into a working force the prohibition sentiment. It matters not how well or ill the standard-bearer conducts himself under the fire of enemies, whether open foes or concealed enemies of the cause, the duty of the voter is to vote his sentiment, nor be affrighted by the blowing of a leaf.

GLEANINGS has previously asked the question, "Can't we get together?" and in this latest utterance reveals the reason why we can't; for it is the same reason from Maine to California, and from partisan and non-partisan alike. The blowing of a leaf causes affright.

We will get together. No vaporings on either side shall deter. The time for close-range action is at hand. GLEANINGS, not being an organ for either side, is just the paper to propose and be heard in this matter.

I believe the Prohibition party has blazed the way to the annihilation of the liquor-traffic by teaching men to vote for *what they want* in legislation. The Anti-saloon League is but a child of the parent. The public measures a party by the number of its votes. The Prohibition party is infinitely bigger than its vote. The Anti-saloon League is larger than the number of its contributors; but a discussion of these is not intended here. What is wanted is future plans. Let us amalgamate. It will hurt our pet hopes; but, no matter. The end sought is the only good. Here is a plan:

A national convention of all prohibition forces to be held in Indianapolis next fall. Let the political powers disband with flying colors, and a new organization take the places of the Prohibition party and the Anti-saloon League. Let our leaders have time to bring into being an organized unity that will be invincible, not seeking the spoils of office, but raising the penalties and making repulsive the liquor-traffic and its hangers-on; and let no one stand in the way.

We will get together, and end the tragedy, though it cost a thousand lives instead of trampled feelings. Bladen, Ohio, Jan. 6. CHAS. H. CARGO.

Amen to the above, Bro. C.; and if it is true that I have been disturbed by the "blowing of a leaf," as you express it, I will try to scrape up a little more faith, and perhaps a little more patience and humility.

By the way, I have just had a letter from Superintendent Baker in which he declares that, since the brewers have failed to keep their promise in such a shameful manner in regard to license in Ohio, there is no course now except for *all* the temperance people to join together and demand Statewide prohibition. As I understand it, this would mean the Prohibition party and the Anti-saloon League can work together (at least in Ohio) *as a unit*. May God hasten the time.

DON'T KEEP BEES, BUT KEEPS "BUSY."

On page 176, Feb. 15, I suggested that "L. R. H." must be a beekeeper. It seems he got hold of that number of GLEANINGS, and replies as follows:

To A. I. R.:—No, I do not keep bees. I keep busy. L. R. H.

Let me explain further: L. R. H. stands for L. R. Horton, of Spokane, Wash., the publisher of a bright little pamphlet entitled "101 Shots at the Liquor-traffic." The price of this attractive little book of about a dozen pages is a nickel, or by the quantity \$2.00 per 100, and they are being scattered by the thousand all over the world. The little book is *red* outside, and as a general rule it is *read* inside by everybody who knows how to read. A man in Illinois was so much taken up with it that he ordered \$8000 worth, and he is going to send them to Sunday-schools and to their superintendents throughout the United States and Canada.

HOW ARKANSAS IS "KILLING TWO BIG BIRDS WITH ONE STONE."

We clip the following from the Cleveland Plain Dealer:

ARKANSAS BARS SALOONS.

LITTLE ROCK, Feb. 10.—Final action was taken by the legislature to-day on a bill that practically prohibits the sale of liquor in Arkansas. It provides that a person intending to open a saloon must obtain signatures of a majority of white adults in the city or town in which he hopes to do business.

The measure is looked upon as practically a State-wide prohibition act, because names of white women as well as men must be obtained, and the negro population is not taken into consideration.

May God be praised for what Arkansas has done, and may other States speedily "sit up and take notice," letting *good women* have a voice in the matter, and also killing the drink evil with one bold "fling."

UNITING THE TEMPERANCE FORCES.

We clip the following from the *American Advance* of March 29, not so much because of the very kind words for the Home Department, but because the editor of a prohibition paper speaks thus kindly of a periodical that has been foremost in endorsing the Anti-saloon League from its start up to the present time.

PROHIBITION BEEKEEPERS.

It is said that there are more Prohibitionists among the beekeepers of America than among any other group of business men. At any rate, readers, editors, and publishers alike have reason to be proud of the brilliant representative of that trade, GLEANINGS IN BEE CULTURE, published at Medina, Ohio. Many strong blows against the liquor traffic have been struck by the veteran editor of this magazine, A. I. Root, who contributes to the March 15th issue, just out, a most compelling and suggestive discussion of civic righteousness under the head of "Our Homes." We congratulate GLEANINGS as well as its readers upon the continuously fine spirit of its editorial pages.